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FIG. 1 — RED CROSSBILL. Adult Male
 FIG. 2 — RED CROSSBILL. Im. Male
 FIG. 3 — RED CROSSBILL. Female

FIG. 4 — WHITE-WINGED CROSSBILL. Adult Male
 FIG. 5 — WHITE-WINGED CROSSBILL. Im. Male
 FIG. 6 — WHITE-WINGED CROSSBILL. Adult Female

(One-half natural size)

Bird = Lore

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No. 1

My Experience with Von Berlepsch Nesting-boxes

By FREDERIC H. KENNARD, Newton Centre, Mass.

With photographs by Fred B. McKechnie

OUR place in Newton Centre, Mass., consists of a piece of land, about forty-four acres in extent, lying along the southerly and westerly side of a hill, and includes as follows:

Three acres of lawn between the house and road on the westerly side of the place; with a few picturesque old apple trees scattered about, remnants of an orchard of the previous generation. We keep clipped only that portion of the lawn immediately about the house, garden and tennis lawn; and on the remainder cultivate hay, thus affording the ground-building birds additional chance. Such a lawn, with its waving grass tops, with their lights and shadows and many tints, and, in their season, thousands of crocuses, narcissi, and daisies, is always far more satisfactory to me than any closely trimmed lawn could ever be.

Six acres of rather wet tussock-grown meadow, on the southerly side of the place and at the base of the hill. Through this runs a brook, bordered by birches, elms, red maples, witch hazels, alders, wild roses, etc.

And about thirty-five acres of woods, which may be divided, for convenience of description, into two areas, East and West.

Unfortunately, the spring before my purchase of the place, five years ago, a very destructive brush fire had run through the woods, and in the East portion the underbrush, which had included a second growth of white pines, birches, etc., had been entirely destroyed; and today the wood here is an open park, in which the underbrush is just springing up again, but devoid of that coppice so necessary for affording protection to the birds, shading and protecting the ground, as well as cloaking the naked monotony of the trunks.

In the seventeen acres comprising the West wood, however, the fire was providentially checked before it had burned over the whole of it.

This area, on the westerly portion of which the house is set, is nearly covered by a wood of tall white pines, pitch pines, and a few hemlocks, interspersed

with oaks of various sorts, red maples, hickories, and quantities of gray birch, while on the southerly slope are hundreds of cedars. Scattered among these trees, and along their edges as border plantations, are clumps of high-bush blueberries, wild azalea, shad bush, witch hazel, Florida dogwood, privet, buckthorn, and the like, and perhaps, commonest of all, quantities of barberries. Beneath these, in turn, is a carpet consisting of two kinds of blueberries, huckleberries, bayberry, sweet fern, wild rose, etc., interspersed with great quantities of ferns of various kinds, partridge berry, and numbers of berry-bearing herbaceous perennials.

Since my purchase of the place, I have allowed the meadow practically to take care of itself, and, in the case of the East Wood, am simply waiting for the native underbrush to grow again; but, with the West Wood, a great deal of care has been taken in thinning trees, and affording a better light for the development of the undergrowth beneath them. Though the progress is necessarily slow, there has been a lot of pruning for thickening purposes; but in certain places there is not, as yet, so much of the taller undergrowth as I should like.

We have, however, in addition to those already growing there naturally, planted numbers of cornels and viburnums of various kinds, including the high-bush cranberry and mountain ash, for their berries, as well as native rhododendrons for winter protection.

In the winter of 1908-1909, my friend, Ernest Harold Baynes, happened, while visiting us, to call my attention to the little book "How to Attract and Protect the Wild Birds," by Martin Hiesemann, translated by Emma S. Buchheim.

While numerous notices and a few brief reviews of this work have appeared, it does not seem to me that sufficient attention has been paid to it, and I cannot too strongly recommend its purchase and perusal by every lover of birds who has not yet chanced to see it*.

For the benefit of those, however, who have not yet seen the book, it may be briefly stated that it is an account of the system employed by Baron von Berlepsch on his family estate at Seebach, "The District of Lagensalza, in Thuringea," for the preservation and increase of useful birds.

This system, which the Baron has carried on for a number of years with phenomenal success, includes:

1. Creating of opportunities for breeding.
 - a. For birds that build in holes (by putting up bird-boxes).
 - b. For birds that build in the open (by the planting, cultivating and pruning of underbrush for the birds' protection; food-supply, and convenience in nesting).
2. Winter feeding (the construction and distribution of various appliances

*For sale by the National Association of Audubon Societies, 1974 Broadway, New York City. Price, 40 cents.



A WELL-PROTECTED FEEDING SHELTER
Photographed by T. E. Marr, December 28, 1909

for placing before the birds, in all weathers, food that shall be acceptable, accessible and cheap).

3. Fighting the enemies of birds.

After examining a number of holes of different species of Woodpeckers, and noticing that they were all built on the same general plan, Baron von Berlepsch finally succeeded, with the help of special machinery, in making out of sections of trees some remarkably good imitations, which he attached to the trees in his park and woods, and with the most astonishing results.

There are three types of these boxes manufactured: A, A¹, B, C and D, vertical, and of various sizes; E, horizontal; and F, cup-shaped, with an open side.

A, with the entrance hole 32 mm. in diameter, and about the size of those made by our Downy Woodpeckers; and useful also, I should say, for Tree Swallows, and White-bellied Nuthatches, if they can be persuaded to build in them.

A¹, with the entrance hole 27 mm. in diameter, useful for Chickadees, and House Wrens (and too small for English Sparrows).

B, with the entrance hole 46 mm. in diameter, of the size best adapted for Bluebirds.

C, with the entrance hole 60 mm. in diameter, readily adopted by Golden-winged Woodpeckers and Screech Owls.

NESTING-BOX, STYLE
"A" OPENING $1\frac{1}{8}$
INCHES.

D, with the entrance hole 85 mm. in diameter, for which there seems to be no especial call here in New England, although Golden-winged Woodpeckers and Screech Owls would doubtless use them if they could not get the smaller sizes, and possibly Sparrow Hawks.

Of the other two types, E is a horizontal box with the hole in the end, which, Mr. Hiesemann says, is "for Swifts," and which, in this country, might be utilized by Tree Swallows (and doubtless by English Sparrows); while F is an open-sided cup-shaped arrangement, which, the author states, "Is made



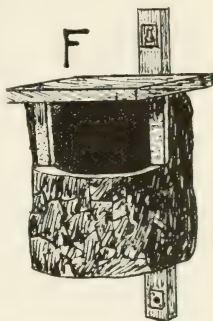
NESTING-BOX, STYLE "E." A HORIZONTAL BOX

for such birds as Redstarts, Spotted Flycatchers and Pied-wagtails," and which, in this country, might, if properly placed, be used by Robins and Phœbes (and English Sparrows).

These boxes are bolted to an oaken batten, by which they are in turn fastened to the trees. They have oak covers, which are screwed on, but which should be fastened with hinges and hooks, so as to allow, when necessary, a more easy examination of their contents.

Explicit directions are given as to the season, position, and method of hanging these boxes, as applied to European birds.

After reading the book and digesting its contents, I immediately ordered from Germany twenty of the Berlepsch nesting-boxes for trial, five each A, A¹, B, and C. I ordered none of type D, for I knew of no birds in my immediate vicinity that would use them that could not get into type C. I was afraid of type E as being too attractive to English Sparrows, and type F seemed to me unnecessary on this place, where the Robins that might use it have so many natural sites for their nests among the apple trees and cedars. The boxes arrived late in March, during my absence on a business trip; but I returned in time to get them into position on April 10, 1909, and they seemed to prove an instant success, for a pair of Bluebirds were flying in and out of one of them on my lawn within half an hour.



NESTING-BOX. STYLE "F"

As the directions regarding position are all for European birds, and as a great deal, of course, depends upon the choice, the simplest directions I can give, from my experience, to those putting up the boxes in this country, is to use their knowledge of the birds' habits as fully as possible in the choice of locality and position. In other words, if you were a Bluebird or a Chickadee or a Flicker, where would you most often be found, and where would you like your nest? If you have not this knowledge, I would suggest that you commandeer into service some one who has.

I did not expect anything like the percentage of occupancy shown at Seebach. The nests were put up late, and we have here nothing like the number of birds, twenty-seven or more, as shown on Mr. Hiesemann's list, that build in deep holes. The following list of ten birds includes most of the species hereabouts that would, under ordinary circumstances, utilize such boxes: Screech Owls, Golden-winged, Hairy, and Downy Woodpeckers, Great-crested Flycatchers, Tree Swallows, White-bellied Nuthatches, Chickadees, House Wrens, and Bluebirds; and I had to content myself, the first year, with the fact that five out of the twenty were surely occupied, and I have reason to believe two others.

A pair of Chickadees raised a brood in a type A¹ box on the side of a cedar within thirty feet of my library window, and I have every reason to believe that another pair occupied another type A¹ nest on the side of a hard pine, in the woods south of the house; but, by the time I had examined it, an officious red squirrel had furnished the box to suit himself, and so mixed up



NESTING-BOX USED BY CHICKADEE
IN CEDAR JUST OUTSIDE AUTHOR'S
LIBRARY WINDOW.

the original contents as to make recognition impossible. The same thing happened with a box, type C, about which I had seen a Great-crested Flycatcher; a pair of red squirrels got in there also.

A pair of Bluebirds occupied two boxes of type B for their first and second broods respectively, and a pair of Golden-winged Woodpeckers raised a brood in a type C, while another box of this type was utilized at once for a sleeping-apartment by a Screech Owl.

In the spring of 1910, I imported 15 more nest-boxes, 5 each A, A¹, and B, making 35 in all, of which six were in apple trees on the lawn, as an attraction for Tree Swallows and House Wrens, as well as Bluebirds that already nested there; while six others were scattered through the East Wood for the Woodpeckers and Nuthatches that frequent it.

In 1910, no additional birds bred in the boxes on the lawn. The Bluebirds were still there, but Tree Swallows and House Wrens scorned my repeated offers of hospitality, and no birds occupied the six nests placed in the East Wood.

I had hoped particularly to attract a pair of Hairy Woodpeckers that spent

In the West Wood, where the remaining twenty-three boxes were located,

the pair of Chickadees nested again in the cedar by my library window, while the Screech Owls this year raised three young in the box, type C, in which they roosted last year. The Golden-winged Woodpeckers seemed to like their new houses, type C, and two pairs used them. One of them raised a brood without difficulty, but the other had its first nest broken up by red squirrels, and so moved to another box in which a gray squirrel had just raised



APPLE-TREE WITH NESTING-BOX USED BY BLUEBIRD

a litter of young, and, pulling out the lining of this nest, proceeded to raise a brood there.

This year, 1911, apparently the same pairs of birds are nesting in the same places, though the Bluebirds took a different box for their first brood. Flickers occupied two boxes, and the Chickadees came back as usual; while White-bellied Nuthatches and Great-crested Flycatchers were seen about other boxes.

The Screech Owls were apparently so disgusted with the disturbance we made last year in photographing their young that they nested elsewhere.

I have been, of course, very much disappointed in the above showing; and yet, after due consideration, it seems to me that many of the difficulties

may be overcome in time, and I have this year imported more boxes from abroad.

In the orchard on the lawn there were six boxes, three of size A¹ and three of size B. Two of these are occupied, each year, by a pair of Bluebirds for their first and second broods, but I have, so far, failed to attract either Tree Swallows or House Wrens, though I hope to be able to do so some time in the future.



A FEEDING SHELTER

The East Wood, where there were also six boxes, has, with its lack of underbrush, proved to be unattractive to birds that build in boxes, and the few Woodpeckers that frequent it make their nests elsewhere.

That a large percentage of the boxes in the West Wood were not occupied seems to be due to various causes. There have been three pairs of Flickers

breeding there, one pair of Screech Owls, two pairs of Chickadees, and probably one pair each of White-bellied Nuthatches, and Great-crested Flycatchers.

In this country, I have always found that, in the case of non-gregarious species, there are usually only about so many to a given area. There may be numerous cousins, but each pair of a given species hunts over a given area, to the exclusion of others of a given species.

At Seebach, however, the birds seem to be changing their habits, in order to adapt themselves to the exceptionally favorable conditions that there prevail.

On our place, particularly in the East Wood, lack of the proper kind of under-brush and coppice and "whorls," which Baron von Berlepsch finds so necessary for nest-building, is, undoubtedly, still somewhat of a deterrent; though in the West Wood, birds of the underbrush, Towhees, Catbirds, and the like are increasing in numbers each year.

Of food, I am sure that birds on our place have enough both in winter and in summer.

Squirrels, particularly red ones, besides their destructiveness in general, seem to be the most important factor in preventing occupancy of bird-houses.

Of the thirty-five nests put up in 1910, nearly all had their entrance holes more or less gnawed, several had been ruined, twenty-five had their contents tampered with, while seven contained red squirrels' nests, two, flying squirrels' nests, and one a litter of grays.

I ordered no food appliances from abroad, but at once built a food-house, as shown in the plate, which, instead of standing rather clumsily on four legs, is upheld by one central rustic cedar post, set in concrete three feet in the



HICKORY WITH NESTING BOX OCCUPIED
BY FLICKER

ground, among a clump of Barberries and Buckthorn bushes, just outside the library window, from which I can in winter watch the almost constant stream of Chickadees, Juncos, and White-bellied Nuthatches that feed there. Other birds come there occasionally—Blue Jays, and Goldfinches, and an occasional Song Sparrow, but the three first species are there daily.

This food-house proved so successful that I have since put up another in a nearby thicket.

What these two food-houses do not supply, the birds get from the many weeds, berry-bearing trees and bushes, old stumps and coverts, with which the West Wood is supplied.



NESTING-BOX IN PINE OCCUPIED
BY SCREECH OWL

While the experience with nest-boxes has not been so gratifying as I could have wished, those tending to provide nesting-places in the open have certainly shown marked results, as the following lists of birds that are at present breeding, and their comparison, will show:

On the lawn among the old apple-trees.—Golden-winged Woodpecker, Kingbird, Chipping Sparrow, Robin, Bluebird.

Among the bordering shrubbery.—Song Sparrow, Field Sparrow, Yellow Warbler, Robin, Catbird.

Among the trees bordering the roadside.—Baltimore Oriole, Yellow-throated and Warbling Vireos.

In the meadow.—Red-winged Blackbirds, Song Sparrows, and numbers of Maryland Yellow Throats, and, in 1911, a pair of Redstarts and a pair of Yellow-throated Vireos.

In the East Wood, which is of about the same area as the West Wood, and which before the fire was one of the best coverts hereabouts, and filled with birds, there are today only one pair of Wood Pewees, one pair of Bluebirds in an old Woodpecker's hole, and, probably, two or three pairs of Ovenbirds among the new undergrowth. While, in a pond at the back of the place, a brood of ten young Black Duck 'flappers' were seen disporting themselves during the past summer.

In the West Wood, with its protecting evergreens, coppice, and the undergrowth, which we are working so hard to develop, there breed each year the following birds:

Robin,	Purple Finch,
Catbird,	Goldfinch,
Brown Thrasher,	Song Sparrow,
Chickadee,	Chipping Sparrow,
Ovenbird,	Towhee,
Maryland Yellow-throat,	Indigo bird,
Golden-winged Warbler,	Crow,
Nashville Warbler,	Blue Jay,
Black and White Warbler,	Phoebe,
Chestnut-sided Warbler,	Ruby-throated Hummingbird,
Black-throated Green Warbler,	Black-billed Cuckoo,
Pine Warbler,	Golden-winged Woodpecker,
Scarlet Tanager,	Downy Woodpecker,
Cedar Waxwing,	Screech Owl,
Red-eyed Vireo,	Ruffed Grouse.

In the chimneys of the house, which is here located, are Swifts; and a pair of Phœbes build their nest each year upon the cornice over the front door. Great-crested Flycatchers and White-bellied Nuthatches undoubtedly build here too, although I have never yet found their nests; and there are several other varieties which ought to be found here, and probably do build here, but of whose breeding I have as yet had no proof, such as Rose-breasted Grosbeaks.

I have found also Red-shouldered and Cooper's Hawks' nests here, but have discouraged them from breeding.

In putting up nest-boxes on a place like this, a record should be kept of their position as well as what happens to each.

Each box should be numbered on the bottom and in plain sight, or perhaps with a brass tag at the base of the tree. They should be inspected carefully each year just before the breeding-season, and squirrels' nests, etc., removed; and again after the breeding-season (second brood, if any) is over, and the old nests removed; and, in this locality, the gipsy moths, and their egg clusters taken care of.

Against the enemies of the birds on this place we keep up a constant warfare.

With cats we are seldom bothered, for the few venturesome ones belonging to our neighbors, committed suicide long ago by trespassing within our boundaries. Skunks are eliminated as fast as they can be caught, and foxes seem to find my neighbor's hens and chickens more fattening than the small birds on my place.

Of the squirrels, the red ones are the worst pests we have. I have been suspicious of the gray squirrels, but they were too pretty to molest, as were the flying squirrels; but my advice to people putting up Berlepsch boxes is, to go out and kill all the red squirrels, and then go out and do it all over again, for there will be plenty come to their funerals.

Cooper's and Red-shouldered Hawks, which used to live here, have departed, while English Sparrows, that are never very keen about places of this sort, seem to shun it. Once in a while I shoot a few young ones in the autumn about the hen-yard, but that is all.

Of Crows we have many. They have always built upon the place; and within half a mile is a roost that, in summer, lodges each night from 150 to 800, depending upon the season. I can not find that on this place they ever destroyed a bird's nest, though I do have to protect my corn and peas by various devices.

Of Jays we have numbers, at least two pairs breeding, and, while I am usually distrustful of them, I can not find but that here they live on amicable terms with their neighbors. There have been many nests of young birds upon which I have kept an eye, and I have yet to find any evidence of their having been disturbed by Jays.

Of the Screech Owls I wish I could speak as well. They are great pets of mine, whistling almost nightly outside my window, and coming close when I imitate them.

We are taught by our paternal government that they are beneficial, and the majority of them undoubtedly are; but I found, in the spring of 1910, that this especial pair had lined their nest very warmly and elaborately with the freshly-plucked feathers of many small birds, including Chickadees, Juncos, Downy Woodpeckers, Flickers, and Jays, that I had lately missed; and it seems to me that the career of these Owls, like this article, should end.



COWBIRD

Photographed by Guy A. Bailey

A Glimpse into the Life History of the Turkey Vulture

By R. W. WILLIAMS, Jr., Tallahassee, Fla.

With a photograph by the author

THE rusty, prosaic, semi-domestic Turkey Vulture has been the theme of many scientific and popular articles in years gone by, and, let us hope, will continue to be in the years to come, so long as there remains anything to be added to an exhaustive history of its life. I recall how, some years ago, ornithological sages engaged in a spirited disputation as to whether the Vulture is guided to its accustomed food by the sense of smell or the sense of sight. So far as I am informed, a solution of the problem is still in abeyance, or, at all events, is not settled to the satisfaction of every one who has given the matter thought. It is not my purpose here to enter upon any philosophical disquisition about the bird. I merely wish to submit to the readers of BIRD

LORE a snapshot photograph, with a few remarks pertinent thereto, of the Turkey Vulture as he may be seen, any day during the winter, at my home in Tallahassee, Florida. The accompanying picture illustrates the bird at rest and ease on the roof of our house, and was taken from our back yard during the first week in December last. When I hurried into the house for the kodak, there were sixteen of the birds resting and sunning themselves on the roof. By the time I was able to return and properly focus the kodak, seven of them had taken wing. Two of the remaining nine will be seen on the chimney, out



TURKEY VULTURES ON HOUSE-TOP

of which there is issuing a substantial volume of smoke from the fire down in the sitting-room. It is a common practice of these birds to thus warm themselves on cold or damp days by heat that rises from the fires in our home; and one often finds them sitting on the apex of the roof, with wings outstretched to the sun, for the purpose, it is possible, as some one has cruelly suggested, of ridding themselves of the unpleasant odors which must inevitably, to some degree, be communicated to their plumage by the food they customarily eat and the manner in which they sometimes eat it. I am, however, inclined to

the belief that, in thus spreading himself, the Vulture is impelled by all the motives that actuate the good housewife when she exposes the garments of the family to the purifying rays of the sun.

It is not alone in the day that our premises are a resort for Turkey Vultures, but we also have them with us during the long winter nights, when they roost in the immense live oak all draped and bedecked in Spanish moss in the front yard. Here they congregate a while before dark and, after more or less shifting of position from one limb to another, settle down for the night—that is, as I should say, for such nights as we neglect to drive them away; and drive them away we must, for several good and sufficient reasons.

Their services in Tallahassee are valuable. They manage to clear away much minor offal and garbage that otherwise would escape prompt and sanitary destruction. They enjoy immunity from harm, not because of the law of the state which prescribes a fine for killing or maiming them, but because of the tradition that it is wrong to injure a Buzzard. From time immemorial, people of the South seem to have instinctively realized what a valuable friend the bird is alive, and what a useless thing it is dead. Would that the same good sense might prevail in behalf of many other birds of our country.

The Turkey Vulture in New Jersey

By JOHN DRYDEN KUSER, *Bernardsville, N. J.*

During the summer of 1908, Turkey Vultures were frequently seen at *Bernardsville, N. J.* In 1909, they were a common summer resident. One bird was seen April 10, 1910, but very few were seen, following that date, until well into June, and even then they were decidedly scarcer than in the previous year. But in late July and early August they were more common. The latest record for that year was November 19. Once during the summer of 1910 a flock of twenty-one birds was seen.

The year 1911 brought an early record, for, on March 20, one bird was seen; but, as in the year before, hardly any were noted in May. In June, they were somewhat more common than during the same month in 1910. There is a breeding-record of one not very far from *Bernardsville*. (See Mr. C. William Beebe, *N. Y. Zoölogical Bulletin*.)

In 1909, over sixty Vultures were counted on a dead tree near *Allamuchy, N. J.* At *Bordentown* (six miles south-east of *Trenton, N. J.*), Vultures remained during the winter of 1908-9.

At *High Point, N. J.*, which is six miles from *Sussex, N. J.*, and four and one-half miles from *Port Jervis, N. Y.*, at an altitude of 1,809 feet, two Buzzards were often seen in July and August, 1911. The place where they roosted was discovered. It was a dead pine tree, on the south-east side of a mountain. On October 10, six birds were seen, and on November 2, 1911, one bird was seen sailing over *High Point*, just before a snowstorm.

A Myrtle Warbler Nest

By WILLIAM PEPPER, Philadelphia

With photographs by the author

THE discovery of a bird's-nest close to one's house is always a treat to any bird lover; but when it turns out to be that of a bird with whose nesting-habits we are unfamiliar, it should be reckoned as one of the choicest events of the bird year. One day, about the middle of July, at North East Harbor, Maine, after watching from our porch two Myrtle Warblers that seemed to show a great partiality to a large spruce tree near the house, I was delightfully surprised to see their nest just showing between two of the branches of the tree and on the side toward the house. On going to the attic and opening the window, the nest could be seen seven feet away and just a little below the level of the window-sill. True, the nest could not be plainly seen on account of an overhanging branch; but, when the young birds stirred



MYRTLE WARBLER NEAR NEST, A PART OF WHICH MAY BE SEEN SLIGHTLY TO THE LEFT, AND THREE-FOURTHS OF AN INCH BELOW THE BIRD

in the nest, I could see something move, and, when the wind blew, feathers around the edge of the nest could be made out, waving back and forth. I subsequently found that the nest had quite a number of feathers incorporated in it.

Our house had been occupied since May 27, and so, I suppose, the nest had been built while various members of the family were coming and going under the tree every day. It was not possible accurately to count the number of young birds in the nest, but probably there were three. Both the male and

female birds fed the young, and fed them incessantly and without pause, but the female did more work than the male. The birds would become slightly alarmed if any one sat too close to the open window, but paid no attention to any one back a few feet in the rather dark room. I tried to take photographs of both the adult birds, but the male was too quick, and had the habit of sneaking to the nest by a covered route, so that I could not catch him. The female, however, seemed bolder, and would, on returning to the nest, or on



MYRTLE WARBLER IN JUVENAL PLUMAGE

leaving it, often alight on a branch near-by. I thus got a snapshot of her. On July 20, I saw one of the young birds crawling around on the branch near the nest, and later in the day found one of them on the ground under the tree, and, placing it on a young spruce tree close at hand, took four photographs of it while it posed nicely for its picture. For several days, I saw a young Myrtle Warbler around the house being fed by an adult male, and felt confident that it was one of those from the nest I had been watching. I never saw more than one of the young birds at a time after they left the nest, and did not see the female feeding the young except in the nest. A few days later, I climbed the tree and brought down the nest, which was about 24 feet from the ground and about 4 feet from the trunk of the tree and 7 feet from the window. It was a pretty little nest, with a ring of feathers, mostly chicken, around the edge, which curled up over the hollow of the nest, and thus probably served in a way as a protection to the young birds. It was quite compactly built with twigs of conifers, grass, rootlets, and a few hairs. The young bird which I photographed showed plainly the peculiarities of the nestling plumage of the Myrtle Warbler, having a white breast very distinctly streaked with black, whitish wing-bars, and the back brown streaked with black; a very different looking bird from the handsome adult.



PHOTOGRAPH OF A CROW BY HIMSELF

Taken at Portsmouth, N. H., September 7, 1908, by means of a device invented by H. R. Carey

Bird-Lore's Twelfth Christmas Bird Census

IN the northern States, at least, the weather on Christmas Day of 1911 was far more favorable for bird students than for birds! While the exceptionally open season has induced some species to remain with us, north of their usual winter range, their presence by no means compensates for the almost entire lack of those rare and more irregular winter birds towards whose coming we always look forward with a peculiar pleasure.

Santa Barbara, California, again appears to be the resort most favored by birds in the United States during the winter. Last year's census from this locality of 76 species, recorded by J. H. Bowles, W. Leon Dawson and Watson Snyder, is not 'in the running' with the remarkable list of 100 species observed this year by W. Leon Dawson and Stewart Edward White. Indeed, we doubt if so large a number of birds has heretofore been identified in North America on a single winter day.

Second place in the census also goes to California, with the list of 60 species from Marysville, sent by Carl and Julius Mueller.

The editor takes this opportunity to thank those contributors to the census who prepared their manuscript in accordance with the model given in December BIRD LORE, and which has been employed in all preceding censuses, and to plead with all others to adopt it should they take part in future censuses. While he is perfectly willing to admit that better methods of recording census observations exist, the uniformity of treatment which the case demands can be attained only by following the form given, and, incidentally, thereby adding greatly to the pleasure with which the editor, in revising, shares the experience of each census-taker!

May we also call attention to the doubtless already well-known fact that comparatively few printers are ornithologists, and suggest that greater clearness in writing birds' names will tend to greater accuracy in printing them.

The comparatively small question of typographical accuracy suggests the far more important one of ornithological accuracy. While the editor uses all possible care in revising these lists, time is lacking for correspondence concerning records which appear to have been based on erroneous or insufficient identification, and where the circumstances do not appear to warrant their arbitrary exclusion, such records are left, with the understanding that the author alone is responsible.

Should he find subsequently that a species had been wrongly entered, we trust that he will follow the example of Mr. Wilbur F. Smith of South Norwalk, Conn., who on discovering that his census record of the "Shoveller" published in BIRD LORE for February, 1904, is incorrect, asks us to make a statement to that effect.—F. M. C.

Guelph, Ontario.—Dec. 23; 7 A.M. to 12.45 P.M. Very foggy; about one inch of snow; wind light, southwest; temp., 35°. Ruffed Grouse, 6; Hairy Woodpecker, 1; Downy Woodpecker, 2; Purple Finch, 4; Pine Siskin, 116; Junco, 6; Brown Creeper, 2; White-breasted Nuthatch, 5; Red-breasted Nuthatch, 1; Chickadee, 57; Golden-crowned Kinglet, 5. Total, 11 species, 205 individuals.—E. W. CALVERT.

Homings Mills, Ont.—Dec. 25; 9 A.M. to 3 P.M. Clear; about two inches of snow; wind west, strong; temp., 34°. Hairy Woodpecker, 2; Blue Jay, 3; White-winged Crossbill, 80; Snow Flake; Slate-colored Junco, 30; White-breasted Nuthatch; Black-capped Chickadee, 22; Golden-crowned Kinglet, 2. Total, 8 species, 141 individuals.—J. A. NOBLE.

London, Ontario.—Dec. 23; 3.45 to 4.45 P.M. Cloudy; ground bare; wind west, strong and raw; temp., 33°. Kingfisher, 1; Blue Jay, 2; Crow, 3; Tree Sparrow, 2; Junco, 3; White-breasted Nuthatch, 1; Black-capped Chickadee, 9; Golden-crowned Kinglet, 1. Total, 8 species, 22 individuals.

Millbrooke, Ontario.—Dec. 24; 9 A.M. to 12 M. Clear; one inch of snow on ground; wind southwest; temp., 34°. Downy Woodpecker, 1; Blue Jay, 3; Pine Siskin, 12; Snow Bunting, 50; Chickadee, 16. Total, 5 species, 82 individuals.—SAM HUNTER.

Reaboro, Ontario.—Dec. 25; 9.15 A.M. to 12.15 P.M. Cloudy; about three inches of snow; strong westerly wind; temp., 36°F. Ruffed Grouse, 1; Hairy Woodpecker, 2; Downy Woodpecker, 1; Redpoll, about 100; White-breasted Nuthatch, 2; Chickadee, about 30. Total, 6 species, about 136 individuals. Dec. 26 several Pine Siskin, 1 Blue-Jay and about 25 Snowflakes were seen, also 1 Crow.—J. F. CALVERT.

Toronto, Ontario, High Park and Humber Bay.—Dec. 23; 10.30 A.M. to 12.30 P.M. Cloudy; ground bare; moderate northwest wind; temp., about 38°. American Mer-ganser, 6; Downy Woodpecker, 1; Tree Sparrow, 30; Brown Creeper, 6; Chickadee, 15. Total, 5 species, 58 individuals.—MARIE FENTON.

Lewiston, Maine.—Dec. 25; 8 A.M. to 3.30 P.M. Clear; ground partly snow-covered; calm; temp., 38°. Downy Woodpecker, 1; Crow, 35; Redpoll, 3; White-breasted Nuthatch, 2; Chickadee, 4; Golden-crowned Kinglet, 5. Total, 6 species, 50 individuals.—C. D. FARRAR and L. E. FARRAR.

Antrim, N. H.—Dec. 26; 10.30 to 11 A.M.; 1.30 to 4 P.M. Cloudy; snow on ground in woods, patches of snow elsewhere; wind northwest, light; temp., 38 to 45°. Ruffed Grouse, 1; Northern Pileated Woodpecker, 2; Goldfinch, 7; White-breasted Nuthatch, 1; Chickadee, 12. Total, 5 species, 23 individuals.—CHAS. H. and ROBERT J. ABBOTT.

Meriden, N. H.—Dec. 25; 3 to 5 P.M. Clear; ground bare; wind west; temp., 40°. Crow, 1; Goldfinch, 1; Nuthatch, 1. Total, 3 species, 3 individuals.—MRS. E. E. WHEELER.

Corbin Game Preserve, Meriden, N. H.—Dec. 25; 10.45 A.M. to 12.45 P.M. Bright sunshine; ground sparsely covered with brittle snow; wind southwest, light; temp., 42°. Screech Owl, 1 (in a nest-box); Hairy Woodpecker, 1; Downy Woodpecker, 1; Blue Jay, 12; American Crow, 5; American Crossbill, 2; White-winged Crossbill, 13; Northern Shrike, 1; White-breasted Nuthatch, 1; Red-breasted Nuthatch, 5; Chickadee, 7; Golden-crowned Kinglet, 8. Total, 12 species, 57 individuals.—ERNEST HAROLD BAYNES.

Tilton, N. H.—Dec. 25; 8 A.M. to 4.30 P.M. Clear; ground bare in open, snow in woods; wind none; temp., 35°. Great Blue Heron, 1; Canadian Ruffed Grouse, 4; Downy Woodpecker, 1; Blue Jay, 2; Crow, 5; Redpoll, 248; Tree Sparrow, 6; Brown Creeper, 8; Red-breasted Nuthatch, 14; Chickadee, 44. Total, 10 species, 333 individuals.—EDWARD H. PERKINS and ERNEST R. PERKINS.

Bethel, Vermont.—Dec. 19; 1.30 to 4 P.M. Clear; two inches of snow, some bare hillsides; wind northwest, light; temp., 26°. Hairy Woodpecker, 1; Downy Woodpecker, 1; Goldfinch, 4; Redpoll, 1; White-breasted Nuthatch, 3; Red-breasted Nuthatch, 1;

Brown Creeper, 2; Chickadee, 12; Golden-crowned Kinglet, 3. Total, 9 species, 28 individuals.—ELIZA F. MILLER.

Bennington, Vt.—Dec. 25; 8 to 11 A.M. and 2 to 3 P.M. Clear; ground bare; wind west, very light, temp., 35 to 45°. Ruffed Grouse, 1; Downy Woodpecker, 1; Blue Jay, 7; Crow, 20; American Goldfinch, 7; Vesper Sparrow, 1; Slate-colored Junco, 4; Brown Creeper, 3; White-breasted Nuthatch, 1; Red-breasted Nuthatch, 3; Chickadee, 10. Total, 11 species, 58 individuals.—LUCRETIOUS H. ROSS, M.D., and CHARLES HITCHCOCK.

Burlington, Vt.—8 to 10.30 A.M. Cloudy; ground bare; wind west, light; temp., 35°. From window rear "lunch-counter." Chickadee, 8; White-breasted Nuthatch, 3; Hairy Woodpecker, 1; Downy Woodpecker, 5. 3 to 4 P.M. Clear; ground bare; wind west, light; temp., 40°. "Bird-walk." Crow, 1; Chickadee, 5; White-breasted Nuthatch, 3; Downy Woodpecker, 2. Total, 5 species, 28 individuals.—NELLIE M. DAY and EMMA E. DREW.

Cabot, Vt.—Dec. 25; 10 A.M. to 1 P.M. Clear; four inches snow; wind south, light; temp., 50°. Downy Woodpecker, 1; Blue Jay, 2; Pine Grosbeak, 300; Nuthatch, 4; Chickadee, 12. Total, 5 species, 320 individuals.—J. M. TEBBETTS.

Clarendon, Vt.—Dec. 24; 10.55 A.M. to 12 M. Cloudy; ground bare; wind west, light; temp., 33°. Ruffed Grouse, 15; Hairy Woodpecker, 1; Blue Jay, 2; Pine Grosbeak, 16; Purple Finch, 2; White-winged Crossbill, 32; Redpoll, 6; Pine Siskin, 32; Brown Creeper, 1; White-breasted Nuthatch, 1; Red-breasted Nuthatch, 5; Chickadee, 15; Golden-crowned Kinglet, 1.—Total, 13 species, 129 individuals.—L. H. POTTER.

Essex Junction, Vt.—Dec. 26; 1.30 to 4.30 P.M. Cloudy; ground bare; wind south, light; temp., 45°. Redpoll, 300, feeding in white birch trees; Goldfinch, 50; Blue Jay, 2; Crow, 1; Chickadee, 6. Total, 5 species, 359 individuals. Saw flock of Snow Buntings on Nov. 15.—CARLTON D. HOWE.

Berkshire, Mass.—Dec. 25; 2.30 to 5 P.M. Cloudy; ground bare; light east wind; temp., 35°. Downy Woodpecker, 1; Redpoll, 12; Tree Sparrow, 2; White-breasted Nuthatch, 1; Chickadee, 2; Total, 5 species, 18 individuals.—ANNE H. WHITING.

Boston, Mass. (Arnold Arboretum, Jamaica Pond, Olmsted and Riverway Parks).—Dec. 25; 9.30 A.M. to 3 P.M. Clear, ground bare; wind west to southwest, light; temp., 34 to 44°. Herring Gull, 1; Mallard, 1; Black Duck, 261; Baldpate, 1; Lesser Scaup Duck, 5; Golden-eye, 4; Sparrow Hawk, 2; Downy Woodpecker, 5; Northern Flicker, 9; Blue Jay, 15; Crow, 16; Purple Finch, 4; Goldfinch, 28; Pine Siskin, 2; White-throated Sparrow, 6; Tree Sparrow, 32; Junco, 8; Song Sparrow, 5; Mockingbird, 1; Catbird, 1; Chickadee, 14; Hermit Thrush, 1; Robin, 1. Total, 23 species, 424 individuals.—E. E. CADUC and HORACE W. WRIGHT.

Boston, Mass. (Arnold Arboretum, Jamaica Pond, Olmsted and Riverway Parks, the Charles River Basin, and Beacon Hills).—Dec. 22; 10.15 A.M. to 3.15 P.M. Cloudy; ground bare; wind north to southeast, light; temp., 36 to 43°. Great Black-backed Gull, 1; Herring Gull, 100; Merganser, 16; Mallard, 1 drake; Black Duck, 251; Baldpate, 1 drake; Scaup Duck, 101; Lesser Scaup Duck, 4; Golden-eye, 130; Ring-necked Pheasant, 1; Sparrow Hawk, 1; Barred Owl (Beacon Hill), 1; Downy Woodpecker, 1; Northern Flicker, 11; Blue Jay, 15; Crow, 22; Purple Finch, 2 (one singing); Goldfinch, 10; White-throated Sparrow, 5; Tree Sparrow, 4; Slate-colored Junco, 3; Song Sparrow, 8; White-breasted Nuthatch, 1; Chickadee, 13; Golden-crowned Kinglet, 4; Total, 25 species, 716 individuals.—HORACE W. WRIGHT.

Boston, Mass. (Arnold Arboretum, Jamaica and Leverett Ponds).—Dec. 26; 11 A.M. to 1.30 P.M. Fair; ground bare, and grass green; wind west, scarcely perceptible; temp., 45°. Mallard, 1; Black Duck, 282; Baldpate, 1; Lesser Scaup, 5; Golden-eye, 3; Flicker, 2; Blue Jay, 8; Crow, 5; Purple Finch, 1; Goldfinch, 2; White-throated Sparrow, 1; Tree Sparrow, 12; Junco, 6; Song Sparrow, 1; Palm Warbler, 1; Chickadee, 7; Golden-crowned Kinglet, 2; Ring-necked Pheasant, 4. Total, 18 species, 344 individuals. We

watched the Palm Warbler feeding on the ground and in the bushes close at hand for about fifteen minutes. It has been in the same locality for a week or two.—MRS. WILLIAM M. LEVEY and W. CHARLESWORTH LEVEY.

Bridgewater, Mass.—Dec. 25; 9 to 11 A.M. Partly cloudy; ground bare; wind west, moderate; temp., 40°. Black Duck, 1; Bob-white, 8; Ruffed Grouse, 2; Red-tailed Hawk, 1; Downy Woodpecker, 1; Flicker, 1; Blue Jay, 6; Crow, 15; Meadowlark, 20; Purple Finch, 10; Goldfinch, 15; White-throated Sparrow, 2; Tree Sparrow, 20; Junco, 10; Song Sparrow, 1; Brown Creeper, 3; Chickadee, 8; Golden-crowned Kinglet, 8. Total, 18 species, 132 individuals.—HAROLD W. COPELAND.

Cambridge, Mass. (Fresh Pond).—Dec. 25; 2.45 to 3.30 P.M. Cloudy; ground bare; slight westerly wind; temp., 39°. Herring Gull, 150; American Merganser, 14; Lesser Scaup, 5; Black Duck, 100; Northern Flicker, 1; Crow, 4; Chickadee, 1; Golden-crowned Kinglet, 1. Total, 8 species, 276 individuals.—MYLE PEIRCE BAKER.

Cambridge, Mass.—Dec. 26; 2 to 3 P.M. Clear; ground bare; light west wind; temp., 45°. Black-backed Gull, 2; Herring Gull, 1,500; (American) Merganser, 20; Black Duck, 100; Lesser Scaup Duck, 9; Barred Owl (in Boston), 1; Crow, 6; Goldfinch, 2; Chickadee, 2. Total, 9 species, about 1,640 individuals.—H. D. MITCHELL.

Dighton, Mass.—Dec. 25; 8 to 11 A.M. Clear; ground bare; wind southwest, light; temp., 40°. Bob-white, 5; Blue Jay, 5; Crow, 15; Purple Finch, 5; Goldfinch, 15; White-throated Sparrow, 25; Tree Sparrow, 20; Field Sparrow, 20; Slate-colored Junco, 25; Song Sparrow, 5; Myrtle Warbler, 15; Golden-crowned Kinglet, 10; Chickadee, 12; Robin, 4. Total, 14 species, 181 individuals.—F. Seymour Hersey and Charles L. PHILLIPS.

Ipswich, Mass.—Dec. 25; 11 A.M. to 1 P.M.; 2.30 to 4 P.M. Cloudy; ground bare; wind northwest, brisk; temp., 40°. Herring Gull, 1; Pheasant, 2; Crow, 22; Snow Bunting, 40; Chipping Sparrow, 1; Chickadee, 10. Total, 6 species, 76 individuals.—JESSE H. WADE and FRANCIS C. WADE.

Leominster, Mass. (Leominster to Chelmsford).—Dec. 25; clear, and very warm for the season; wind west, very light; ground bare. Pheasants, 13; Mottled Owl, 1; Downy Woodpecker, 2; Hairy Woodpecker, 1; Blue Jay, 2; Crow, 4; Goldfinch, 100; Tree Sparrow, 14; White-breasted Nuthatch, 5; Chickadee, 6; Partridge, 1. Total, 11 species, 149 individuals.—EDWIN RUSSEL DAVIS.

Lunenburg, Mass.—Dec. 24; 8 A.M. to 4 P.M. Partially cloudy, turning to cloudy in afternoon; ground entirely bare; wind southwest; temp., 32°. Ruffed Grouse, 4; Pheasant, 2; Barred Owl, 1; Downy Woodpecker, 3; Blue Jay, 7; Crow, 328; Goldfinch, 16; Pine Siskin, 1; American Crossbill, 5; Northern Shrike, 1; Brown Creeper, 6; White-breasted Nuthatch, 4; Red-bellied Nuthatch, 12; Chickadee, 42; Golden-crowned Kinglet, 5. Total, 15 species, 437 individuals. (I cannot account for the total absence of Tree Sparrows and Juncos from this locality the past three weeks).—CLAYTON E. STONE.

Malden, Mass. (Through Middlesex Fells to Spot Pond).—Dec. 20; 10 to 12 A.M. Clear; ground bare; wind west, light; temp., 30°. Herring Gull, 40; American Merganser, 9; Black Duck, 225; Downy Woodpecker, 2; Blue Jay, 1; Crow, 8; Purple Finch, 2; Redpoll, 36; Goldfinch, 7; Slate-colored Junco, 8; Brown Creeper, 3; Chickadee, 5; Golden-crowned Kinglet, 3. Total, 13 species, 349 individuals.—GORDON BOIT WELLMAN.

Marblehead Neck, Mass.—Dec. 22; 12.30 to 2.15 P.M. Cloudy; ground bare; wind northeast, light; temp., 34°. Horned Grebe, 7; Loon, 3; Black Guillemot, 1; Great Black-backed Gull, 2; Herring Gull, 16; Red-breasted Merganser, 37; Golden-eye, 25; Old Squaw, 15; Scoter, 8; Ring-necked Pheasant, 2; Downy Woodpecker, 1; Flicker, 2; Crow, 4; Tree Sparrow, 10; Song Sparrow, 2; Myrtle Warbler, 15. Total, 16 species, 150 individuals.—LIDIAN E. BRIDGE.

Marshfield, Mass.—Dec. 25; 10.30 A.M. to 1.30 P.M. Fair; ground bare; wind northwest, light; temp., 38 to 50°. Downy Woodpecker, 1; Flicker, 1; Crow, 24; Song Sparrow, 1; Myrtle Warbler, 12; Chickadee, 20. Total, 6 species, 59 individuals.—MRS. GEORGE L. MASON.

Needham, Mass.—Dec. 23; 10 A.M. to 2.30 P.M. Partly cloudy; ground bare; wind northwest, brisk; temp., 45°. Downy Woodpecker, 1; Flicker, 1; Blue Jay, 7; Crow, 13; Meadowlark, 30; Purple Finch, 20; Tree Sparrow, 12; Brown Creeper, 2; White-breasted Nuthatch, 2; Chickadee, 7; Golden-crowned Kinglet. Total, 11 species, 97 individuals.—CHARLES E. HEIL.

Boston, Mass. (Newtonville to Arnold Arboretum and Jamaica Pond).—Dec. 24; 8 A.M. to 3 P.M., 3.30 to 4.30 P.M. Clear in morning, clouding over later; ground bare; temp. about 45°. Herring Gull 20; Black and Red-legged Black Duck 150; Baldpate 1; Lesser Scaup 5; Golden-eye 5; Pheasant 2; Red-shouldered Hawk (?) 1; Barred Owl 1; Downy Woodpecker 1; Flicker 4; Blue Jay 6; Crow 30; Purple Finch 4; Goldfinch 3; Pine Siskin 40; White-throated Sparrow 3; Tree Sparrow 30; Slate-colored Junco 60; Song Sparrow 6; Palm Warbler 1; Brown Creeper 1; White-breasted Nuthatch 2; Chickadee 25; Golden-crowned Kinglet 30; Robin 8. Total 25 species about about 430 individuals.—H. L. BARRETT, H. D. MITCHELL, J. A. HAGAR and JOSEPH C. HAGAR.

Rockport, Mass.—Dec. 21; 11.30 A.M. to 2.15 P.M. Partly cloudy; ground bare with light patches of snow; wind northeast, light; temp., 32°. Holboell's Grebe, 2; Loon, 4; Red-throated Loon, 1; Black Guillemot, 7; Dovekie, 1; Great Black-backed Gull, 1; Herring Gull, 150; Red-breasted Merganser, 33; White-winged Scoter, 9; Flicker, 2; Horned Lark, 3; Crow, 9; Ipswich Sparrow, 1; Tree Sparrow, 15; Song Sparrow, 5; Myrtle Warbler, 2. Total, 16 species, 245 individuals.—E. D. BOARDMAN and LIDIAN E. BRIDGE.

West Medford, Mass. (including west side of Middlesex Fells, and South Basin).—Dec. 24; 9 A.M. to 12 M. Cloudy; ground bare; wind southwest, light; temp., 40°. Herring Gull, 16; Merganser, 17; Black Duck, 200; Lesser Scaup, 1; Ring-necked Pheasant, 4; Crow, 8; Blue Jay, 2; Purple Finch, 1; Tree Sparrow, 1; Chickadee, 6; Golden-crowned Kinglet, 5. Total, 12 species, 261 individuals. Sharp-shinned Hawk, 1, seen in P.M.—EDMUND and LIDIAN E. BRIDGE.

Gloicester, R. I.—Dec. 25; 8.45 to 10.15 A.M. Clear; ground bare; wind northwest, very light; temp., 32°. Blue Jay, 2; Chickadee, 5. Total, 2 species, 7 individuals.—J. IRVING HILL.

Manville, R. I.—Dec. 26; 9.30 A.M. to 12 M. Hazy; ground bare; no wind; temp., 34°. Downy Woodpecker, 1; Flicker, 1; Blue Jay, 5; Crow, 4; Purple Finch (a large flock), 100; Tree Sparrow, 12; Song Sparrow, 1; White-breasted Nuthatch, 1; Chickadee, 6. Total, 9 species, 131 individuals.—ANNA P. C. MOWRY.

Point Judith, R. I.—Dec. 25; Clear; warm; wind southwest, light. Herring Gull, 2,000; Red-breasted Merganser, 3; Black Duck, 10; Greater Scaup, 50; Golden-eye, 200; White-winged Coot, 100; Marsh Owl, 1; Downy Woodpecker, 2; Flicker, 4; Shore Lark, 20; Crow, 4; Meadowlark, 50; Field Sparrow, 5; Song Sparrow, 1; Fox Sparrow, 2; White-breasted Nuthatch, 2; Chickadee, 2. Total, 17 species, 2,419 individuals.—ISRAEL R. SHELTON.

Providence, R. I. (Blackstone Park).—Dec. 20; 12.45 to 1.45 P.M. Clear; ground bare; wind south. Herring Gull, 30; Flicker, 4; Blue Jay, 3; Crow, 1; Junco, 3; White-breasted Nuthatch, 2; Chickadee, 3; Golden-crowned Kinglet, 2. Total, 8 species, 48 individuals.—CHARLES H. ABBOTT.

Providence, R. I.—Dec. 24; 11 A.M. to 1 P.M. Clear; ground bare; wind southwest; temp., 44°. Downy Woodpecker, 2; Flicker, 3; Blue Jay, 4; Crow, 2; Goldfinch, 3; Snow Bunting, 25; Myrtle Warbler, 1; Brown Creeper, 2; Nuthatch, 3; Chickadee, 2. Total, 10 species, 47 individuals.—EDWARD D. KEITH.

Warwick, R. I.—Dec. 24; 10.45 A.M. to 2 P.M. Cloudy; ground bare; light northwest wind; temp., 40°. Herring Gull, 65; Scaup Duck, 6; Downy Woodpecker, 2; Flicker, 6; Blue Jay, 15; Crow, 11; Purple Finch, 4; Goldfinch, 9; Tree Sparrow, 35; Junco, 48; Song Sparrow, 2; Myrtle Warbler, 53; Brown Creeper, 1; White-breasted Nuthatch, 2; Chickadee, 65; Golden-crowned Kinglet, 29; Robin, 1. Total, 17 species, 354 individuals.—HARRY S. HATHAWAY.

Woonsocket, R. I.—Dec. 25; 9.15 to 11.15 A.M. Clear; ground entirely bare; wind west, very light; temp., 32 to 42°. Blue Jay, 8; Crow, 6; Goldfinch, 15; Tree Sparrow, 20; Junco, about 50; Song Sparrow, 3; Chickadee, 9; Golden-crowned Kinglet, 5. Total, 8 species, about 116 individuals.—CLARENCE M. ARNOLD.

Hartford, Conn.—Dec. 25; 10.30 A.M. to 12 M. Clear; ground bare; no wind; temp., 46°. Sparrow Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 2; Flicker, 1; Blue Jay, 15; Crow, 24; Starling, 12; Meadowlark, 2; Redpoll, 2; Goldfinch, 2; Tree Sparrow, 27; Slate-colored Junco, 52; Song Sparrow, 2; White-breasted Nuthatch, 2; Chickadee, 9; Hermit Thrush, 1. Total, 16 species, 155 individuals.—CLIFFORD M. CASE.

Hartford, Conn.—Dec. 25; 9.40 to 11.40 A.M. Clear; ground bare; no wind; bright sun; temp., 30°. Downy Woodpecker, 1; Blue Jay, 4; Crow, 11; Junco, 6; Mockingbird, 1; Chickadee, 15. Total, 7 species, 40 individuals. The Juncos and Mockingbird were seen the previous afternoon. To my knowledge a Mockingbird has spent the last three winters in this same identical spot, even staying in the same clump of rose bushes nearly all of its stay. I have watched diligently for three years to learn of its summer haunts, but am still as much in the dark as when I began. Last winter I saw two others wintering in different places in West Hartford, all three disappearing synchronously.—ARTHUR G. POWERS.

New Canaan, Conn.—Dec. 23; 10.30 A.M. to 12 M., 1.30 to 4 P.M. Cloudy and rainy; ground bare; wind light; temp., 38°. Downy Woodpecker, 3; Blue Jay, 3; Crow, 6; Goldfinch, 2; Pine Siskin, 20; Tree Sparrow, 12; Junco, 15; Song Sparrow, 3; Fox Sparrow, 1; Chickadee, 7; White-breasted Nuthatch, 1; Golden-crowned Kinglet, 5. Total, 12 species, 78 individuals.—HAROLD E. JONES.

New Haven, Conn. (East shore and Edgewood Park).—Dec. 25; 9.30 A.M. to 1.30 P.M. Light west wind; cloudy; temp., 35°. Horned Grebe, 2; Herring Gull, 18; Old Squaw, 2; Blue Jay, 3; Crow, 21; Starling, 57; Meadowlark, 1; Purple Finch, 2; Goldfinch, 1; Savannah Sparrow, 1; White-throated Sparrow, 10; Tree Sparrow, 25; Song Sparrow, 5; Swamp Sparrow, 1; Fox Sparrow, 2; Brown Creeper, 1; White-breasted Nuthatch, 2; Chickadee, 7. Total, 18 species, 161 individuals.—ALBERT W. HONYWILL, JR., and DWIGHT B. PANGBURN.

New Haven, Conn. (Edgewood Park and Marvel Wood).—Dec. 25; 9 A.M. to 1.30 P.M., and Sandy Point 3.30 to 4 P.M. Clear; ground bare; no wind; temp., 34 to 46°. Herring Gull, 50; Golden-eye, 2; Ruffed Grouse, 1; Sharp-shinned Hawk, 1; Red-shouldered Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 5; Flicker, 1; Horned Lark, 3; Blue Jay, 24; Crow, 18; Starling, 35; Meadowlark, 2 (singing); Rusty Blackbird, 26; Purple Finch, 2; Goldfinch, 16; Tree Sparrow, 120; Field Sparrow, 6; Junco, 7; Song Sparrow, 9; Swamp Sparrow, 6; Brown Creeper, 3; White-breasted Nuthatch, 3; Chickadee, 18; Golden-crowned Kinglet, 4. Total, 25 species, 364 individuals.—CLIFFORD H. PANGBURN.

New London, Conn.—Dec. 26; 9 A.M. to 4 P.M. Clear; ground bare; wind west, light; temp., 38°. Pied-billed Grebe, 13; Herring Gull, 22; White-winged Scoter, 2; Kingfisher, 2; Downy Woodpecker, 3; Shore Lark, 7; Crow, 58 (afterward found a roost of 300, estimated); Jay, 3; Starling, 103; Meadowlark, 8; Tree Sparrow, 7; Song Sparrow, 9; Savannah Sparrow, 6; Fox Sparrow, 2; Junco, 4; Goldfinch, 1; Brown Creeper, 2; White-breasted Nuthatch, 1; Chickadee, 9; Golden-crowned Kinglet, 1. Total, 21 species, 617 individuals.—FRANCES M. GRAVES.

Spencer, Mass.—Dec. 24; 9.30 to 11.30 A.M. Cloudy; ground bare; northwest wind, light; temp., 28°. Ruffed Grouse, 2; Downy Woodpecker, 1; Blue Jay, 4; Crow, 6; Tree Sparrow, 3; Junco, 4; Fox Sparrow, 1; Brown Creeper, 8; White-breasted Nuthatch, 1; Red-breasted Nuthatch, 14; Chickadee, 30. Total, 11 species, 74 individuals.—B. A. HUTCHINS.

Sturbridge, Mass.—Dec. 25; 8 A.M. to 12 M. Clear; ground bare; wind west; temp., 35°. Downy Woodpecker, 2; Blue Jay, 1; Crow, 6; Goldfinch, 13; Tree Sparrow, 4; Brown Creeper, 1; Red-breasted Nuthatch, 2; Chickadee, 5. Total, 8 species, 34 individuals.—J. HAYNES and H. H. STONE.

West Hartford, Conn., and Reservoir Park.—Dec. 25; 7 A.M. to 2 P.M. Clear; ground bare; wind westerly, light; temp., 32°. Ruffed Grouse, 1; Downy Woodpecker, 3; Crow, 158; Goldfinch, 1; Tree Sparrow, 6; Junco, 20; Chickadee, 33; Golden-crowned Kinglet, 1. Total, 8 species, 223 individuals.—MR. and MRS. N. C. WARDWELL, MR. and MRS. H. P. MEECH, and MISS JULIA F. WHITE.

Windsor, Conn.—Dec. 26; 10 A.M. to 2.45 P.M. Cloudy all day; no wind; temp., 40°. American Merganser, 1; Bob-white, 8; Hairy Woodpecker, 1; Downy Woodpecker, 10; Blue Jay, 5; Crow, 800; Starling, 50; Redpoll, 1; Goldfinch, 9; White-throated Sparrow, 1; Junco, 12; Song Sparrow, 3; Tree Sparrow, 2; White-breasted Nuthatch, 8; Chickadee, 19; Golden-crowned Kinglet, 3. Total, 16 species, 1,133 individuals.—MRS. EUSTACE L. ALLEN.

Buffalo, N. Y.—Dec. 25; 11 A.M. to 1.30 P.M. Cloudy; ground bare; wind west, light; temp., 47°. Crow, 6; White-throated Sparrow, 1; Brown Creeper, 2; Chickadee, 5. Total, 4 species, 14 individuals.—MRS. GEORGE M. TURNER.

Canandaigua, N. Y.—Dec. 25; 2.30 to 5 P.M. Clear; ground bare; wind northwest, light and steady; temp., 50°. Horned Grebe, 3; Herring Gull, 10; American Merganser, 1; Mallard, 7; Black Duck, 20; Redhead Duck, 25; Canada Goose, 100; Ruffed Grouse, 2; Rough-legged Hawk, 1; Screech Owl, 1; Hairy Woodpecker, 1; Downy Woodpecker, 3; American Crow, 20; Meadowlark, 1; Song Sparrow, 30; Towhee, 1; Northern Shrike, 1; White-breasted Nuthatch, 4; Chickadee, 6. Total, 19 species, 237 individuals.—DAVID DARLING.

Fairport, N. Y.—Dec. 26; 12 M. to 1 P.M. Cloudy; ground bare. Downy Woodpecker, 1; Chickadee, 2. Total, 2 species, 3 individuals.—JULIA MOESEL.

Far Rockaway, N. Y.—Dec. 23; 2 to 4.30 P.M. Partly cloudy; ground bare; wind south, light; temp., 45°. Herring Gull, 1,000 (estimated); Canada Goose, 15; Sparrow Hawk, 1; Downy Woodpecker, 4; Crow, 1; Starling, 10; Junco, 8; Song Sparrow, 7; Robin, 2. Total, 9 species, 1,048 individuals (estimated).—CHARLOTTE BOGARDUS.

Geneva, N. Y.—Dec. 24; all day. Cloudy; wind north, light; temp., 36°. Holboell's Grebe, 2; Horned Grebe, 15; Herring Gull, 2; Ring-billed Gull, 1; Redhead, 100; Canvasback, 15; Greater Scaup, 500; Lesser Scaup, 12; Golden-eye, 17; Old Squaw, 125; King Eider, 1; Canada Goose, 43; Red-shouldered Hawk, 1; Screech Owl, 1; Hairy Woodpecker, 1; Downy Woodpecker, 3; Crow, 50; Tree Sparrow, 20; Junco, 9; Song Sparrow, 2; White-breasted Nuthatch, 5; Chickadee, 6; Brown Creeper, 3; Golden-crowned Kinglet, 1. Total, 24 species, 935 individuals.—WILLIAM BREITFIELD, EDGAR DYKE, and OTTO MCCREARY.

Hamburg, N. Y.—Dec. 24; 1.30 to 5 P.M. Ground bare; cloudy; wind southwest, light; temp., 35°. Flicker, 1; Prairie Horned Lark, 2; Blue Jay, 2; Crow, 6; Junco, 1; Northern Shrike, 1; White-breasted Nuthatch, 6; Robin, 1. Total, 8 species, 20 individuals.—THOMAS L. BOURNE.

Huntington, L. I., N. Y.—Dec. 26; 8 to 11 A.M. Cloudy; ground bare; wind southwest, light; temp., 45°. American Herring Gull, 29; Downy Woodpecker, 3; Blue Jay, 5; American Crow, 15; Starling, 2; American Goldfinch, 8; White-throated Sparrow, 1;

Tree Sparrow, 2; Junco, 30; Song Sparrow, 19; Chickadee, 2. Total, 11 species, 116 individuals.—CHARLOTTE E. LEE.

Long Beach, L. I., N. Y.—Dec. 24; 9.45 A.M. to 3.40 P.M. Dull, cloudy; wind west, light; temp., 40°. Horned Grebe, 3; Great Black-backed Gull, 7; Herring Gull, 300; Old Squaw, 20; Canada Goose, 5; Crow (sp.?), 1; Goldfinch, 3; Tree Sparrow, 75; Song Sparrow, 12; Swamp Sparrow, 4; Myrtle Warbler, 25. Total, 11 species, 455 individuals.—FRANCIS HARPER.

Matteawan, N. Y.—Dec. 25; 11 A.M. to 1 P.M. Gray and cloudy; ground bare and thawing; temp., 45°. Hairy Woodpecker, 2; Crow, 5; Goldfinch, 3; Brown Creeper, 2; White-breasted Nuthatch, 1; Chickadee, 3. Total, 6 species, 14 individuals.—HARRIET B. BADEAU.

Sheepshead Bay and Manhattan Beach, New York City.—Dec. 23; 1.15 to 4.45 P.M. Cloudy at start, then clear; wind northwest, strong; temp., 51°. Great Black-backed Gull, 24; Herring Gull, 2,000; Horned Lark, 200; Starling, 44; Lapland Longspur, 4; Song Sparrow, 2. Total 6 species, 2,250 individuals.—GEORGE E. HIX.

New York, N. Y. (Bronx River to Pelham Bay Park).—Dec. 24; 10 A.M. to 3 P.M. Cloudy; wind variable, light; ground bare; temp., 38°. Herring Gull, 64; Bob-white, 1; Red-tailed Hawk, 1; Downy Woodpecker, 3; Crow, 34; Starling, 29; White-throated Sparrow, 1; Tree Sparrow, 23; Junco, 9; Song Sparrow, 30; Fox Sparrow, 1; White-breasted Nuthatch, 3; Chickadee, 1. Total, 13 species, 200 individuals.—EDWARD FLEISCHER.

New York City. South Ferry, New York, and Princes Bay, S. I., to Dongan Hills, S. I., thence to Great Kills, S. I.—Dec. 24; 9 A.M. to 4.45 P.M. Wind, light to brisk west; sky, overcast; light shower in late P.M.; temp., 38°. Great Black-backed Gull, 7; Herring Gull, 575; Ring-billed, Gull, 1; Bonaparte's Gull, 12; American Scaup Duck, 6; Golden-eye, 8; Old Squaw, 8; Marsh Hawk, 1; Red-shouldered Hawk, 2; Sparrow Hawk, 3; Barn Owl, 1; Short-eared Owl, 3; Barred Owl, 1; Downy Woodpecker, 3; Blue Jay, 2; Crow, 28; Meadowlark, 29; Starling, 297; Goldfinch, 7; Seaside Sparrow, 1; White-throated Sparrow, 1; Tree Sparrow, 50; Song Sparrow, 11; Cardinal, 1; Chickadee, 2. Total, 25 species, 1,060 individuals.—WILLIAM T. DAVIS, CLINTON G. ABBOTT, and HOWARD H. CLEAVES.

Orient, L. I., N. Y.—Dec. 25; 7 A.M. to 5.30 P.M. A.M., cloudy, misty; heavy rain all preceding night; P.M., clearing; wind, fresh to brisk northwest; ground bare, free from frost; temp., 40°. Horned Grebe, 11; Loon, 9; Black-backed Gull, 2; Herring Gull, 550; Red-breasted Merganser, 39; Black Duck, 4; Scaup Duck, 300; Lesser Scaup, 30; Bufflehead, 35; Old Squaw, 430; White-winged Scoter, 1,050; Surf Scoter, 400; Sharp-shinned Hawk, 2; Sparrow Hawk, 1; Marsh Hawk, 4; Screech Owl, 2; Kingfisher, 3; Flicker, 23; Downy, 4; Horned Lark, 515; Crow, 535; Fish Crow, 1; Blue Jay, 3; Starling, 47; Cowbird, 3; Meadowlark, 373 (common in song); Goldfinch, 6; Snow Bunting, 130; Siskin, 1; Savannah Sparrow, 1; White-throated Sparrow, 6; Tree Sparrow, 170; Song Sparrow, 88; Swamp Sparrow, 1; Fox Sparrow, 1; Myrtle Warbler, 167; Chickadee, 23; Golden-crowned Kinglet, 14; Robin, 12. Total, 39 species, 5,018 individuals.—ROY, HARRY and FRANK LATHAM.

Otto, N. Y.—Dec. 26; 11 A.M. to 3 P.M. Cloudy; wind southeast, light; ground bare; temp., 40°. Partridge, 1; Kingfisher, 1; Hairy Woodpecker, 1; Downy Woodpecker, 3; Junco, 6; White-breasted Nuthatch, 11; Brown Creeper, 2; Black-capped Chickadee, 14. Total, 8 species, 39 individuals.—WALLACE GRUBE, MR. and MRS. A. S. CONETEE, and HELEN CONETEE.

Port Chester, N. Y.—Dec. 23; 8.15 A.M. to 4.45 P.M. Cloudy; ground bare; wind west, moderate; temp., 47°. Horned Grebe, 2; Loon, 1; Herring Gull, 150; Ring-billed Gull, 4; American Golden-eye, 31; Old Squaw, 4; White-winged Scoter, 3,000; Red-shouldered Hawk, 1; Downy Woodpecker, 10; Northern Flicker, 1; Blue Jay, 3; Ameri-

can Crow, 17; Starling, 45; Meadowlark, 10; Goldfinch, 1; White-throated Sparrow, 1; Tree Sparrow, 40; Slate-colored Junco, 25; Song Sparrow, 8; White-breasted Nuthatch, 7; Chickadee, 27; Golden-crowned Kinglet, 5. Total, 22 species, 3,393 individuals.—RICHARD L. BURDSALL, P. CECIL SPOFFORD, E. MORRIS BURDSALL, JAMES MAPLES.

Rhinebeck, N. Y.—Dec. 25; 10 A.M. to 12.30 P.M. Clear; ground bare; wind southwest, light; temp., 40°. Barred Owl, 1; Hairy Woodpecker, 4; Downy Woodpecker, 4; Blue Jay, 9; Crow, 14; Purple Finch, 20; Goldfinch, 15; Tree Sparrow, 10; Song Sparrow, 1; Brown Creeper, 1; White-breasted Nuthatch, 11; Chickadee, 10; Golden-crowned Kinglet, 4; Ruby-crowned Kinglet, 1. Total, 14 species, 105 individuals. On Dec. 26, Starling, 8.—MAUNSELL S. CROSBY.

Rexville, N. Y.—Dec. 25; 2 to 4 P.M. Clear; ground bare; wind south, light; temp., 45°. Redpoll, 24; White-breasted Nuthatch, 4; Chickadee, 6. Total, 3 species, 34 individuals.—JOSEPH SWEENEY.

Rochester, N. Y. (Bushnell Basin).—Dec. 24; 9 A.M. to 4 P.M. Cloudy; ground bare; no wind; temp., 37°. Downy Woodpecker, 2; Blue Jay, 1; Crow, 4; Tree Sparrow, 50; Junco, 12; White-breasted Nuthatch, 14; Chickadee, 35; Brown Creeper, 2. Total, 8 species, 120 individuals.—HARRY GORDON and OSCAR F. SCHAEFER.

Rochester, N. Y. (Sea Breeze to Forest Lawn and return).—Dec. 24; 10 A.M. to 1 P.M. and from 2 to 3 P.M. Cloudy; ground bare, soft; wind west, light; temp., 36°. Herring Gull, 19; Downy Woodpecker, 3; Crow, 5; Tree Sparrow, 30; Brown Creeper, 1; White-breasted Nuthatch, 2; Chickadee, 8; Total, 7 species, 69 individuals.—NETTIE SELLINGER PIERCE.

Setauket, L. I., N. Y.—Dec. 25. Clear; ground bare; wind west, light; temp., 44 to 35°. Loon, 2; Herring Gull, 200; Black Duck, 75; Shelldrake, 3; Old Squaw, 50; Coot, 1,000; Night Heron, 3; Horned Lark, 12; Blue Jay (heard), 1; Crow, 7; Starling, 75; Meadowlark, 3; Junco, 25; Chickadee, 3. Total, 14 species, 10,459 individuals.—MRS. S. B. STRONG, KATE W. STRONG, WALTER WHITE.

Syracuse, N. Y.—Dec. 25; 1 to 5 P.M. Cloudy; ground bare; temp., 40°. Northern Loon, 2; Black Duck, 3; Horned Lark, 4; Snow Bunting, 1; Song Sparrow, 2. Total, 5 species, 12 individuals.—J. WINTHROP PENNOCK.

Bloomfield and Newark, N. J.—Dec. 25; 9.15 A.M. to 2.30 P.M. Clear; ground bare; no wind; temp., 32°. Sharp-shinned Hawk, 1; Sparrow Hawk, 1; Barred Owl, 1; Downy Woodpecker, 4; Blue Jay, 1; Crow, 26; Starling, 500; Goldfinch, 7; White-throated Sparrow, 3; Tree Sparrow, 1; Junco, 26; Song Sparrow, 14; Fox Sparrow, 1; Brown Creeper, 1; White-breasted Nuthatch, 1; Chickadee, 6; Golden-crowned Kinglet, 2. Total, 17 species, 595 individuals.—LOUIS S. KOHLER.

Bridgeton, N. J.—Dec. 27; 10 A.M. to 4 P.M. Morning rain, afternoon clear; no snow; west winds; temp., 55°. Herring Gull, 2; Turkey Vulture, 39; Red-tailed Hawk, 2; Belted Kingfisher, 1; Hairy Woodpecker, 2; Downy Woodpecker, 3; Flicker, 1; Jay, 6; Crow, (about) 1,500; Meadowlark, 19; Goldfinch, 6; Tree Sparrow, 94; Junco, 155; Song Sparrow, 32; Fox Sparrow, 9; Cardinal, 43; Winter Wren, 2; Tufted Titmouse, 21; Chickadee, 12; Robin, 49; Bluebird, 2; Mourning Dove, 36. Total, 22 species, 2,039 individuals.—BENNETT K. MATLACK.

Camden, N. J.—Dec. 24; 7.15 A.M. to 12.30 P.M. Cloudy until 1 P.M., rained rest of the day; wind west; temp., 40°. Herring Gull, 14; Sharp-shinned Hawk, 1; Red-tailed Hawk, 3; Downy Woodpecker, 4; Crow, 25; Red-winged Blackbird, 15; Goldfinch, 17; White-throated Sparrow, 6; Song Sparrow, 20; Tree Sparrow, 70; Field Sparrow, 1; Junco, 40; Fox Sparrow, 2; Towhee, 1; Cardinal, 6; Yellow Palm Warbler, 1; Winter Wren, 4; Carolina Wren, 2; Brown Creeper, 1; White-breasted Nuthatch, 2; Tufted Titmouse, 4; Chickadee, 1. Total, 22 species, 240 individuals.—JULIAN K. POTTER.

Edgewater, N. J. (Up the river, along base of Palisades, returning through Coytes-

ville, Nordhoff and Phelps Estate).—Dec. 28; 10.30 A.M. to 3.45 P.M. Partly cloudy; wind west, very strong; ground bare; temp., 25 to 27°. No ice in river. Herring Gull, 30; Red-shouldered Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 5; Flicker, 1; Crow, 3; Starling, 1; Goldfinch, 28; Pine Siskin, 4; White-throated Sparrow, 50; Tree Sparrow, 20; Junco, 5; Song Sparrow, 15; Cardinal, 2; Carolina Wren, 6; Brown Creeper, 3; White-breasted Nuthatch, 2; Chickadee, 25; Golden-crowned Kinglet, 3. Total, 19 species, 205 individuals.—STANLEY V. LADOW.

Englewood and Leonia, N. J. (Palisades, woods marshes, etc.).—Dec. 24; 9 A.M. to 4 P.M. Overcast; temp. about 40°; wind, light, variable. Herring Gull, 20; Marsh Hawk, 2; Red-tailed Hawk, 3; (?) Red-shouldered Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 8; Flicker, 2; Blue Jay, 6; Crow, 12; Starling, 250; Meadowlark, 1; Purple Finch, 7; Goldfinch, 8; White-throated Sparrow, 50; Tree Sparrow, 125; Junco, 55; Song Sparrow, 20; Fox Sparrow, 2; Carolina Wren (Palisades), 20; Winter Wren, 3; Brown Creeper, 4; White-breasted Nuthatch, 5; Chickadee, 17; Golden-crowned Kinglet, 6; Hermit Thrush, 4; Robin, 1. Total, 26 species, 633 individuals.—JOHN TREADWELL NICHOLS and WILLIAM W. GRANT.

Hackettstown, N. J.—Dec. 26; 8 to 10.50 A.M., 1.35 to 4.30 P.M. Fog, partly clear later. Downy Woodpecker, 3; Flicker, 3; Blue Jay, 1; Crow, 160; Starling, 2; Meadowlark, 9; Purple Finch, 9; Goldfinch, 1; Tree Sparrow, 9; Junco, 17; Myrtle Warbler, 2; Brown Creeper, 1; White-breasted Nuthatch, 2; Chickadee, 8; Golden-crowned Kinglet, 4; Bluebird heard repeatedly on Christmas day. Total, 17 species, 231 individuals.—MARY PIERSON ALLEN.

Morristown, N. J.—Dec. 25; 8.30 to 11 A.M., 3.30 to 4.30 P.M. Clear, ground bare; wind light, northwest; temp., 36°. Screech Owl, 1 (heard at night); Kingfisher, 1; Downy Woodpecker, 1; Blue Jay 4; Crow, 8; Starling, 20; Purple Finch, 6; Goldfinch, 17; White-throated Sparrow, 5; Tree Sparrow, 7; Junco, 16; Song Sparrow, 1; Winter Wren, 1; Brown Creeper, 7; White-breasted Nuthatch, 17; Tufted Titmouse, 2; Chickadee, 25; Golden-crowned Kinglet, 1. Total, 18 species, 140 individual.—R. C. CASKEY.

130th St. Ferry, N. Y. City (to Coytesville, Nordhoff and Leonia, N. J.).—Dec. 24; 10.40 A.M. to 4.40 P.M. Cloudy; ground bare; wind southwest, light; temp., about 42°. Herring Gull, 300; Red-tailed Hawk, 2; Hairy Woodpecker, 2; Downy Woodpecker, 3; Northern Flicker, 1; Crow, 1; Starling, 4; Purple Finch, 3; Goldfinch, 2; White-throated Sparrow, 1; Tree Sparrow, 20; Chipping Sparrow, 1; Junco, 24; Song Sparrow, 18; Fox Sparrow, 1; Carolina Wren, 1; Brown Creeper, 1; White-breasted Nuthatch, 1; Chickadee, 7; Golden-crowned Kinglet, 1. Total, 20 species, 395 individuals.—CHARLES H. ROGERS.

Moorestown, N. J.—Dec. 25; 5.45 to 7.30 A.M., 8.10 A.M. to 5.51 P.M. Clear to partly cloudy; ground bare; wind, northwest; temp., at start, 30°. Mourning Dove, 8; Red-tailed Hawk, 3; Red-shouldered Hawk, 1; Broad-winged Hawk, 1; Sparrow Hawk, 5; Long-eared Owl, 1; Belted Kingfisher, 1; Hairy Woodpecker, 3; Downy Woodpecker, 9; Horned Lark, 8; Blue Jay, 13; Crow, 70; Starling, 10; Purple Finch, 2; Goldfinch, 32; White-throated Sparrow, 14; Tree Sparrow, 124; Junco, 73; Song Sparrow, 56; Swamp Sparrow, 1; Fox Sparrow, 3; Cardinal, 18; Northern Shrike, 1; Myrtle Warbler, 2; Yellow Palm Warbler, 4; Carolina Wren, 1; Winter Wren, 7; Brown Creeper, 2; White-breasted Nuthatch, 4; Tufted Titmouse, 5; Chickadee, 5; Golden-crowned Kinglet, 10; Robin, 4.—Total, 33 species, 501 individuals.—WILLIAM B. EVANS, and GEORGE H. HALLETT, JR.

Morristown, N. J.—Dec. 25; 9.30 to 11 A.M. Clear; ground bare; light westerly wind; temp., 24°. Sparrow Hawk, 1; Crow, 3; Blue Jay, 23; Downy Woodpecker, 2; White-breasted Nuthatch, 2; Goldfinch, 7; Bluebird, 1; Junco, 35; Chickadee, 1; White-throated Sparrow, 2. Total, 10 species, 70 individuals.—ANNA A. and FRANK D. VOGT.

Newark, N. J. (Branch Brook Park, vacant lot near Second River, Morris Canal.—

Dec. 26; 10.30 A.M. to 12.15 M., 2.45 to 5 P.M. Cloudy, very damp; light fog; ground bare, soft; wind west, light, temp., 46, 48, 49, 45°. Downy Woodpecker, 2; Blue Jay, 2; Starling, about 85; White-throated Sparrow, 8; Tree Sparrow, 9; Junco, 20; Field Sparrow, 1; Song Sparrow, 2; Fox Sparrow, 1. Total, 9 species, about 130 individuals. NOTE.—All except 10 Starlings seen in A.M. in or very near Park. It seems worthy of notice that I always find White-throated Sparrows about Christmas time in Newark in considerable numbers, but in two winters and part of a third at Princeton, 40 miles south, I have only one winter record, though the bird is common in migration.—R. F. HAULENBECK.

Newfield, N. J.—10 A.M. to 4 P.M. Clear; ground bare; wind west, light; temp., 32°. Bob-white, 9; Blue Jay, 4; Crow, 9; Downy Woodpecker, 1; Goldfinch, 10; Purple Finch, 3; Tree Sparrow, 30; Junco, 100; Song Sparrow, 5; Myrtle Warbler, 1; Bluebird, 2. Total, 11 species, about 174 individuals.—WM. W. FAIR.

Passaic, N. J.—Dec. 27; 10 to 11 A.M. Foggy; no wind; ground clear; temp., 45°. Blue Jay, 6; Junco, 7; Song Sparrow, 2; White-breasted Nuthatch, 1. Total, 4 species, 16 individuals.—LELAND EDWARDS and DONALD B. VAIL.

Passaic, N. J., and vicinity.—Dec. 25; 10.30 A.M. to 12.30 P.M. Clear; wind, light, west; ground bare; temp., 47°. Downy Woodpecker, 3; Crow, 3; Starling, 75; Tree Sparrow, 12; Song Sparrow, 3; Brown Creeper, 1. Total, 6 species, 97 individuals.—ROBERT EDWARDS, PAUL MCQUILLEN, CARL W. VAIL.

Plainfield, N. J. (to Ash Swamp).—Dec. 25; 9.20 A.M. to 6.30 P.M. Clear; ground bare. Cooper's Hawk, 1(im.); Red-shouldered Hawk, 2; Sparrow Hawk, 1; Barred Owl, 1; Hairy Woodpecker, 1; Downy Woodpecker, 2; Blue Jay, 12; Crow, 120; Fish Crow, 2; European Starling, 10; Purple Finch, 4; Goldfinch, 18; Pine Siskin, 2; Tree Sparrow, 50; Field Sparrow, 2; Junco, 40; Song Sparrow, 14; Swamp Sparrow, 1; Carolina Wren, 2; Brown Creeper, 1; White-breasted Nuthatch, 3; Tufted Titmouse, 1; Chickadee, 22; Golden-crowned Kinglet, 1; Hermit Thrush, 1; Robin, 1. Total, 26 species, 315 individuals. The Carolina Wrens, a pair, are the only ones noted in this vicinity for over a year. On Dec. 24 a Ruby-crowned Kinglet was seen by me near Plainfield and most satisfactorily identified. This is my first winter record of this species.—W. DEW. MILLER.

Trenton, N. J.—Dec. 17; 10 A.M. to 1 P.M. Clear; ground bare; brisk west wind; temp., 47°. Downy Woodpecker, 6; Crow, 20; Junco, 25; Song Sparrow, 4; Chickadee, 15; White-breasted Nuthatch, 2. Total, 4 species, 72 individuals. On Dec. 3, Redpoll, Purple Finch and Fox Sparrow were observed in this vicinity.—WILLIAM M. PALMER.

Troy Hills, N. J.—Dec. 25; 8 A.M. to 4.30 P.M. Clear; ground bare, but wet; wind west, light; temp., 30°. Mallard, 2; Black Duck, 9; Pin-tail, 4; Marsh Hawk, 2; Red-shouldered Hawk, 1; Sparrow-Hawk; Short-eared Owl, 1; Screech Owl, 1; Bob-white, 20; Ring-necked Pheasant, 2; Downy Woodpecker, 2; Red-headed Woodpecker, 1; Flicker, 1; Belted Kingfisher, 2; Blue Jay, 3; Crow, 29; Meadowlark, 7; Starling, 5; American Goldfinch, 6; Tree Sparrow, about 50; Song Sparrow, 5; Brown Creeper, 4; White-breasted Nuthatch, 2; Black-capped Chickadee, 8. Total, 26 species, about 171 individuals.—BENJ. F. HOWELL.

Buckingham, Pa.—Dec. 25. Sparrow Hawk, 1; Owl, 1; Downy Woodpecker, 6; Flicker, 2; Blue Jay, 10; Crow, 30; Rusty Blackbird, 2; Cardinal, 4; Song Sparrow, 8; Tree Sparrow, 8; English Sparrow (1 flock); White-breasted Nuthatch, 4; Tufted Titmouse, 1; Chickadee, 20; Golden-crowned Kinglet, 5; Ruby-crowned Kinglet, 1; Robin, 1; Bluebird, 3. Total, 19 species, 125 individuals.—MRS. ELIZABETH F. JAMES

Chester, Pa. (and Crum Creek from Crum Lynne to Avendale and Swarthmore).—Dec. 25; 10 A.M. to 12.30 P.M. Clear, almost calm; temp., 37°. Downy Woodpecker, 4; Flicker, 1; American Crow, 17; Bronzed Grackle, 1; Goldfinch, 6; Purple Finch, 35; Tree Sparrow, 10; Junco, 85; Song Sparrow, 35; Cardinal, 7; Carolina Wren, 1; Brown

Creepers, 1; White-breasted Nuthatch, 2; Tufted Titmouse, 2. Total, 14 species, 207 individuals.—ARTHUR C. COMEN.

Chestnut Hill, Pa. (the Cresheim Valley).—Dec. 25; 11.30 A.M. to 3.30 P.M. Clear; ground bare; wind west, light; temp., 53°. Hairy Woodpecker, 1; Downy Woodpecker, 3; Flicker, 1; Crow, 9; Meadowlark, 8; Goldfinch, 9; White-throated Sparrow, 1; Tree Sparrow, 1; Junco, 50; Song Sparrow, 12; Field Sparrow, 9; Cardinal, 6; Carolina Wren, 3 (one singing); Winter Wren, 2; Chickadee, 2; Golden-crowned Kinglet, 4; Bluebird, 4. Total, 17 species, 125 individuals.—GEORGE LEAR, 2ND.

Frankford in Philadelphia, Pa.—Dec. 25; 10.30 A.M. to 12 M. Clear; bright sunshine; ground bare and wet; wind west, light; temp., 40°. Downy Woodpecker, 1; Flicker, 3; Crow, 6; Meadowlark, 1; Junco, 60; Song Sparrow, 2; Tufted Titmouse, 1; Chickadee, 2. Total, 8 species, 76 individuals.—HENRY L. BORNEMAN.

Greenville, Pa., Riverside Park, Pa.—Dec. 25; 11 A.M. to 12.30 P.M. Weather, cloudy, at times clearing; light southwest wind; slight traces of snow; temp., 37°. Hairy Woodpecker, 1; Downy Woodpecker, 5; Blue Jay, 2; Crow, 1; Purple Finch, 6; Goldfinch, 2; Tree Sparrow, 13; Cardinal, 2; White-breasted Nuthatch, 3; Black-capped Chickadee, 2. Total, 10 species, 43 individuals.—R. H. GERBERDING.

Lititz, Pa. (Northern Lancaster County, Upper Valley of the Hammer Creek).—Dec. 26; 7 A.M. to 5 P.M. Cloudy, with fog and intermittent rain; ground bare; wind east, light; temp., 45°. Ruffed Grouse, 4; Bob-white, 11; Turkey Vulture, 1; Sparrow Hawk, 2; Red-tailed Hawk, 1; Flicker, 2; Hairy Woodpecker, 1; Downy Woodpecker, 13; Belted Kingfisher, 1; Blue Jay, 4; Crow, 250; Cardinal Grosbeak, 3; Junco, 115; Song Sparrow, 7; Tree Sparrow, 265; Goldfinch, 22; Horned Lark, 55; Brown Creeper, 4; White-bellied Nuthatch, 6; Black-capped Chickadee, 19; Tufted Titmouse, 5; Golden-crowned Kinglet, 9; Bluebird, 6. Totals, 23 species, 806 individuals.—HERBERT H. BECK and ELMER E. KAUTZ.

Philadelphia, Pa. (Wissahickon and Cresheim Creeks, within city limits).—Dec. 26; 10.30 A.M. to 4 P.M. Cloudy; heavy fog with occasional showers and hail; light northeast wind; temp., 41°. Downy Woodpecker, 3; American Crow, 3; White-throated Sparrow, 1; Tree Sparrow, 12; Junco, 40; Song Sparrow, 4; Cardinal, 10; Carolina Wren, 2; Winter Wren, 1; Brown Creeper, 2; White-breasted Nuthatch, 1; Tufted Titmouse, 2; Chickadee, 12; Golden-crowned Kinglet, 8. Total, 14 species, 101 individuals.—DR. and MRS. WM. PEPPER.

LaFayette, Pa., to Chestnut Hill, Pa.—Dec. 23; 1.30 to 4.30 P.M. Cloudy; ground bare; wind south, light; temp., 54°. Blue Jay, 1; Crow, 6; White-throated Sparrow, 9; Junco, 41; Song Sparrow, 10; Cardinal, 2; Carolina Wren, 7; Chickadee, 1; Golden-crowned Kinglet, 2. Total, 9 species, 79 individuals.—CHARLES PLATT, 3D, and B. FRANKLIN PEPPER.

Reading, Pa.—Dec. 25; 2.30 to 5 P.M. Very cloudy, damp, muddy. American Crow, 3; Purple Finch, 8. Total, 2 species, 11 individuals. ALFRED O. GROSS and EDNA G. GROSS.

Reading, Pa. (Along the Wyomissing Creek).—Dec. 25; 9 A.M. to 12 M. Traces of snow; cloudy to clear; light wind; temp., 38 to 45°. Sparrow Hawk, 5; Belted Kingfisher, 1; Downy Woodpecker, 3; Crow, 10; Baltimore Oriole, 1 (positive identification; saw same bird at same place Dec. 10 and 17); Goldfinch, 5; Tree Sparrow, 20; Junco, 50; Song Sparrow, 20; Cardinal, 2 (male and female); Winter Wren, 2; Chickadee, 5; Golden-crowned Kinglet, 1. Total, 13 species, 125 individuals.—G. HENRY MENGEL.

West Chester, Pa.—Dec. 25; 10 A.M. to 12.30 P.M., and 4 to 5 P.M. Clear; ground bare, slightly frozen at start, very muddy at noon; no wind. Red-tailed Hawk, 5; Sparrow Hawk, 2; Hairy Woodpecker, 1; Downy Woodpecker, 9; Crow, 250; Purple Finch, 1; Goldfinch, 2; Tree Sparrow, 75; Junco, 60; Song Sparrow, 14; Cardinal, 1; Pipit, 4; Carolina Wren, 1; Brown Creeper, 44; White-breasted Nuthatch, 5; Tufted

Titmouse, 7; Golden-crowned Kinglet, 3; Total, 17 species, 444 individuals.—C. E. EHINGER.

West Chester, Pa.—Dec. 25; 9 to 12 M. Clear; light fall of snow on ground; wind, southwest; temp., 34°. Red-tailed Hawk, 1; Red-shouldered Hawk, 1; Sparrow Hawk, 1; Screech Owl, 1; Downy Woodpecker, 3; Starling, 7; Crow, 500; Purple Grackle, 10; Purple Finch, 2; Goldfinch, 30; Slate-colored Junco, 300; Song Sparrow, 10; Tree Sparrow, 60; Brown Creeper, 2. Total, 14 species, 928 individuals.—THOMAS H. JACKSON.

Baltimore, Md. (Windsor Hills, Valley of Gwynn's Falls, and vicinity).—Dec. 25; 8 A. M. to 12.45 P. M. Clear; ground practically bare; no wind; temp., 34°. Bob-white, 9; Turkey Vulture, 13; Red-shouldered (?) Hawk, 1; Downy Woodpecker, 2; Yellow-bellied Sapsucker, 1; Red-headed Woodpecker, 1; Northern Flicker, 2; Blue Jay, 4; Crow, 110; Fish Crow, 6; Purple Finch, 15; Goldfinch, 3; White-throated Sparrow, 25; Tree Sparrow, 3; Slate-colored Junco, 130; Song Sparrow, 17; Cardinal, 16; Myrtle Warbler, 1; Mockingbird, 1; Carolina Wren, 9; White-breasted Nuthatch, 5; Tufted Titmouse, 10; Chickadee, 7; Carolina Chickadee, 4; Golden-crowned Kinglet, 2; Bluebird, 6. Total, 26 species, 403 individuals. On Dec. 17, a Yellow Palm Warbler was seen in the same vicinity.—JOSEPH N. ULMAN and MR. and MRS. G. CLYDE FISHER.

Kenilworth, Md., and Congress Heights, D. C.—Dec. 24; 8.30 to 11.30 A. M. and 12.30 to 2 P. M. Rain or hail all the time, most of the time both; ground bare; no wind; temp., 40°. Herring Gull, 3; Bob-white, 9; Red-shouldered Hawk, 2; Broad-winged Hawk, 1; Sparrow Hawk, 1; Downy Woodpecker, 3; Blue Jay, 7; Crow, 57; Fish Crow, 14; Meadowlark, 3; Goldfinch, 16; White-throated Sparrow, 29; Tree Sparrow, 76; Field Sparrow, 6; Junco, 97; Song Sparrow, 54; Swamp Sparrow, 2; Fox Sparrow, 3; Cardinal, 24; Mockingbird, 2; Carolina Wren, 5; Brown Creeper, 1; White-bellied Nuthatch, 2; Tufted Titmouse, 10; Carolina Chickadee, 4; Golden-crowned Kinglet, 1; Bluebird, 3. Total, 27 species, 435 individuals.—WELLS W. COOKE. (Additional species, seen by Cooke, Fuller and McAtee in the vicinity of the District of Columbia, Dec. 23-25. Great Blue Heron, 1; Black-crowned Night Heron, 4; Ruffed Grouse, 1; Turkey Buzzard, 19; Red-tailed Hawk, 1; Kingfisher, 2; Hairy Woodpecker, 1; Flicker, 2; Purple Finch, 7; Towhee; Cedarbird, 25; Winter Wren, 5; [Red-bellied Nuthatch, one seen Dec. 17] Hermit Thrush, 1; Robin. Making a total of 42 species now wintering near Washington, D. C.).

Cabin John Ridge to Plummer's Island, Md., and Dead Run and Turkey Run, Fairfax Co., Va., and return.—Dec. 24; 10 A. M. to 4 P. M. Rain and sleet whole period. Bob-white, 12; Ruffed Grouse, 1; Kingfisher, 2; Hairy Woodpecker, 1; Downy Woodpecker, 3; Flicker, 2; Blue Jay, 2; American Crow, 1; White-throated Sparrow, 50; Tree Sparrow, 109; Junco, 45; Song Sparrow, 15; Towhee, 1; Cardinal, 14; Carolina Wren, 9; Winter Wren, 1; Brown Creeper, 1; Tufted Titmouse, 4; Carolina Chickadee, 7; Golden-crowned Kinglet, 1. Total, 20 species, 281 individuals. (Where were the Buzzards and Bluebirds?)—W. L. MCATEE.

Plummer's Island, Md.—Dec. 25. Foggy; ground bare; no wind; temp., 41°. Blue Jay, 7; American Crow, 1; Purple Finch, 3; Goldfinch, 20; Junco, 100; Song Sparrow, 12; Cardinal, 6; Cedar Waxwing, 25; Carolina Wren, 1; Winter Wren, 1; Tufted Titmouse, 2; Carolina Chickadee, 10; Golden-crowned Kinglet, 2; Robin, 2; Bluebird, 50. Total, 15 species, 242 individuals.—H. C. FULLER.

Washington, D. C. (To the west of Rock Creek Park, along Piney Branch).—Dec. 25; 11 A. M. to 2 P. M. Cloudy; ground bare and very wet; wind calm; temp., 42°. Turkey Vulture, 5; Hairy Woodpecker, 4; Downy Woodpecker, 4; Crow, 100; Goldfinch, 11; White-throated Sparrow, 1; Tree Sparrow, 67; Chipping Sparrow, 3; Slate-colored Junco, 119; Song Sparrow, 16; Towhee, 1 female; Cardinal, 12; Carolina Wren,

3; Brown Creeper, 3; White-breasted Nuthatch, 4; Tufted Titmouse, 3; Chickadee, 1. Total, 17 species, 547 individuals.—EDWIN B. HUNT.

Accotink, Va.—Dec. 25; on a drive from 9.30 to 11.15 A.M. Very foggy, wind north west, moderate; temp., 40°. Turkey Buzzard, 3; American Crow, 1; Junco, 100; Cardinal, 3; Loggerhead Shrike, 3; Mocking Bird, 3; Chickadee, 1; Bluebird, 5. Total, 8 species, 119 individuals.—WM. P. CATON.

Beulahville, Va.—Dec. 18; 11 to 11.10 A.M. (looking from window into a cedar tree.) Raining, not cold. Flicker, 1; Yellow-bellied Sapsucker, 1; Cardinal, 4; Myrtle Warbler, 6; Nuthatch, 1; Chickadee, 8; Hermit Thrush, 1; Bluebird, 10. Total, 9 species, 29 individuals.—ELIZABETH HAWES RYLAND.

Bowers Hill, Norfolk Co., Va.—Dec. 23; 8 to 10.30 A.M. Steady rain for four days previous, still very cloudy; light south wind; temp., 48°. Herring Gull, 1; Mourning Dove, 21; Turkey Vulture, 9; Barred Owl, 1; Downy Woodpecker, 2; Red-bellied Woodpecker, 1; Flicker, 6; Blue Jay, 3; Crow, 4; Red-winged Blackbird, 18; Meadowlark, 50; Purple Grackle, 234; Purple Finch, 6; Goldfinch, 11; Pine Siskin, 33; Savannah Sparrow, 2; White-throated Sparrow, 8; Field Sparrow, 8; Junco, 25; Song Sparrow, 6; Swamp Sparrow, 4; Fox Sparrow, 8; Towhee, 3; Cardinal, 2; Myrtle Warbler, 5; Pipit, 27; Mockingbird, 1; Brown Thrasher, 4; Carolina Wren, 6; White-breasted Nuthatch, 3; Tufted Titmouse, 2; Chickadee, 3; Golden-crowned Kinglet, 3; Hermit Thrush, 2; Robin, 4; Bluebird, 5. Total, 36 species, 598 individuals.—MERRIAM G. LEWIS.

Pulaski, Va.—Dec. 25; 12.45 to 4.30 P.M. Ground bare; cloudy; slight west wind; temp., 42 to 44°; distance traveled six miles. Killdeer, 1; Turkey Vulture, 116; Sparrow Hawk, 1; Southern Downy Woodpecker, 3; Meadowlark, 14; American Goldfinch, 4; Tree Sparrow, 6; Slate-colored Junco, 84; Song Sparrow, 22; Cardinal, 14; Carolina Wren, 2; House Wren, 2; Brown Creeper, 2; White-breasted Nuthatch, 1; Chickadee, 2; (Kingfisher seen on December 9, which is a record for this section). Total, 16 species, 304 individuals.—O. C. BREWER.

Louisburg, N. C.—Dec. 25; 9.45 A.M. to 12 M. Cloudy; wind light; ground bare; temp., 60°. Buzzard, 12; Marsh Hawk, 1; Hairy Woodpecker, 4; Flicker, 2; Phoebe, 1; Crow, 1; American Crossbill, 2; Goldfinch, 3; White-throated Sparrow, 25; Field Sparrow, 3; Slate-colored Junco, 150; Song Sparrow, 20; Fox Sparrow, 2; Cardinal, 7; Mocking Bird, 2; Brown Thrasher, 1; Carolina Wren, 2; Winter Wren, 2; Brown Creeper, 2; Brown-headed Nuthatch, 3; Chickadee, 2; Robin, 24; Bluebird, 12. Total, 24 species, 286 individuals.—JOSEPH C. JONES.

Southern Pines, N. C.—Dec. 25; 10 A.M. to 12 M. Cloudy; wind southeast; temp., 44°. Downy Woodpecker, 1; Sapsucker, 1; Flicker, 2; Blue Jay, 2; Crow, 7; Meadowlark, 30; Purple Finch, 1; White-throated Sparrow, 1; Chipping Sparrow, 1; Field Sparrow, 25; Junco, 75; Carolina Junco, 2; Song Sparrow, 9; Pine Warbler, 1; Cardinal Grosbeak, 2; Mockingbird, 3; Carolina Wren, 1; Brown Creeper, 1; Tufted Titmouse, 2; Ruby-crowned Kinglet, 1; Hermit Thrush, 1; Bluebird, 2. Total, 22 species, 170 individuals.—E. TWEEDY.

Easley, S. C.—Dec. 26; 10.35 A.M. to 4.35 P.M. Cloudy; mist and fog; temp., 52°. Mourning Dove, 4; Turkey Buzzard, 1; Downy Woodpecker, 1; Pileated Woodpecker, 1; Red-bellied Woodpecker, 1; Flicker, 3; Phoebe, 1; Blue Jay, 3; Goldfinch, 2; Pine Siskin, 1; Fox Sparrow, 2; Towhee, 1 (heard); Cardinal, 4; Loggerhead Shrike, 1; Mockingbird, 1; Carolina Wren, 4; Brown-headed Nuthatch, 10; Tufted Titmouse, 3; Chickadee, 3; Golden-crowned Kinglet, 2; Bluebird, 2. Total, 20 species, 51 individuals.—ANDREW PICKENS.

Marion, S. C.—Dec. 23; 9.30 A.M. to 3 P.M. Cloudy and cool, with very little wind; temp., 54°. Bob-white, 15; Mourning Dove, 16; Turkey Vulture, 3; Black Vulture, 4; Red-shouldered Hawk, 2; Sparrow Hawk, 1; Southern Hairy Woodpecker, 4; Southern Downy Woodpecker, 3; Yellow-bellied Sapsucker, 4; Red-headed Woodpecker, 1; Red-

bellied Woodpecker, 5; Southern Flicker, 4; Blue Jay, 17; American Crow, 14; Cowbird, 25; Red-winged Blackbird, 25; Meadowlark, 8; Florida Grackle, 11; Purple Finch, 1; Vesper Sparrow, 100; Savannah Sparrow, 25; White-throated Sparrow, 150; Chipping Sparrow, 35; Field Sparrow, 50; Slate-colored Junco, 200; Song Sparrow, 75; Fox Sparrow, 3; White-eyed Towhee, 5; Cardinal, 6; Loggerhead Shrike, 3; Pine Warbler, 4; American Pipit, 7; Mockingbird, 6; Catbird, 2; Brown Thrasher, 5; Carolina Wren, 3; Florida White-breasted Nuthatch, 2; Tufted Titmouse, 14; Golden-crowned Kinglet, 2; Ruby-crowned Kinglet, 20; Hermit Thrush, 12; Robin, 4; Bluebird, 5; Total, 43 species, 901 individuals.—E. B. WHEELER, JR.

Atlanta, Ga. (Fulton Co. to Howell's Mill, via Roswell Road and Nancy's Creek Valley).—Dec. 24; 10 A.M. to 5 P.M. Cloudy; moist, ground wet; wind north, light; temp., 55 to 60°. Killdeer, 12; Mourning Dove, 40; Turkey Buzzard, 2; Cooper's Hawk, 1; Red-shouldered Hawk, 1; Red-tailed Hawk, 1; Sparrow Hawk, 1; Pileated Woodpecker, 1; Southern Hairy Woodpecker, 2; Southern Downy Woodpecker, 12; Flicker, 2; Phoebe, 2; Blue Jay, 20; Crow, 2; Meadowlark, 120; Purple Grackle, 2; Purple Finch, 8; Goldfinch, 150; Vesper Sparrow, 8; White-throated Sparrow, 100; Chipping Sparrow, 30; Field Sparrow, 60; Junco, 200; Song Sparrow, 30; Fox Sparrow, 10; Towhee, 20; Cardinal, 12; Cedar Waxwing, 10; Loggerhead Shrike, 1; Mockingbird, 2; Carolina Wren, 12; Brown Creeper, 8; White-breasted Nuthatch, 8; Brown-headed Nuthatch, 6; Tufted Titmouse, 50; Carolina Chickadee, 10; Golden-crowned Kinglet, 10; Ruby-crowned Kinglet, 6; Hermit Thrush, 1; Robin, 250; Bluebird, 20. Total, 42 species, 1,250 (approximately) individuals.—JAMES M. SANFORD.

Coronado Beach, Florida.—Dec. 25; 4.30 to 8 A.M., and 2 to 4 P.M. Clear and warm; wind east-northeast; temp., 73°. Loon, 6; Herring Gull, 4; Laughing Gull, 30; Bonaparte's Gull, 40; Caspian Tern, 50; Royal Tern, 10; Forster's Tern, 50; Black Skimmer, 10; Florida Cormorant, 1; Brown Pelican, 300; Hooded Merganser, 1; Mallard, 2; Scaup Duck, 40; Ward's Heron, 3; American Egret, 1; Louisiana Heron, 20; Little Blue Heron, 1; Clapper Rail, 5; Semipalmated Sandpiper, 30; Sanderling, 60; Killdeer, 2; Semipalmated Plover, 1; Ruddy Turnstone, 40; Mourning Dove, 25; Ground Dove, 10; Turkey Vulture, 1; Black Vulture, 4; Bald Eagle, 1; Sparrow Hawk, 2; Barred Owl, 1; Screech Owl, 1; Belted Kingfisher, 5; Red-bellied Woodpecker, 1; Flicker, 1; Phoebe, 10; Blue Jay, 1; Seaside Sparrow, 10; Towhee, 10; Cardinal, 15; Loggerhead Shrike, 1; Blue-headed Vireo, 1; Louisiana Water-Thrush, 5; Mockingbird, 15; Catbird, 10; Carolina Wren, 1; House Wren, 2; Long-billed Marsh Wren, 5; Blue-Gray Gnatcatcher, 2; Robin, 7. Total, 49 species, 855 individuals.—RAY H. VROOMAN and R. J. LONGSTREET.

Daytona Beach, Fla.—Dec. 24; 9.30 to 11.30 A.M., 3 to 4.30 P.M. Clear; light southwest wind; temp., 82°. Pied-billed Grebe, 1; Herring Gull, 9; Bonaparte's Gull, 10; Florida Cormorant, 1; Brown Pelican, 10; Lesser Scaup Duck, 11; Ward's Heron, 6; Louisiana Heron, 1; Little Blue Heron, 1; Killdeer, 7; Quail, 1; Bob-white, 2; Ground Dove, 6; Turkey Vulture, 35; Black Vulture, 1; Osprey, 1; Belted Kingfisher, 1; Red-bellied Woodpecker, 1; Phoebe, 7; Florida Blue Jay, 5; Florida Jay, 9; Florida Crow, 2; Fish Crow, 21; Florida Redwing, 13; Chipping Sparrow, 16; Red-eyed Towhee, 4; Florida Cardinal, 1; Tree Swallow, 7; Loggerhead Shrike, 11; White-eyed Vireo, 3; Myrtle Warbler, 9; Pine Warbler, 1; Palm Warbler, 6; Mockingbird, 24; Carolina Wren, 1; House Wren, 1; Brown-headed Nuthatch, 2; Tufted Titmouse, 2; Carolina Chickadee, 1; Blue-Gray Gnatcatcher, 2; Robin, 31; Bluebird, 32. Total, 40 species, 323 individuals.—SARAH F. AINSWORTH (Mrs. H. A.)

Jacksonville, Fla.—Dec. 24; 8.30 A.M. to 3.30 P.M. Cloudy and showers; light southwest breeze; temp., 80°. Pied-billed Grebe, 3; Herring Gull, 10; Ring-billed Gull, 2; Laughing Gull, 5; Lesser Scaup, 9; Ground Dove, 3; Black Vulture, 7; Marsh Hawk, 1; Kingfisher, 1; Yellow-bellied Sapsucker, 3; Phoebe, 5; Blue Jay, 3; Fish Crow, 11;

Meadowlark, 6; Song Sparrow, 2; Cardinal, 7; Tree Swallow, 40; Loggerhead Shrike, 6; Myrtle Warbler, 30; Palm Warbler, 12; Maryland Yellowthroat, 1; Pipit, 1; Mockingbird, 15; House Wren, 4; Hermit Thrush, 3; Robin, 2; Bluebird, 6.—Total, 27 species, 200 individuals.—MRS. MARY GRANGER MILLS.

Palma Sola to Passage Key Reservation and return. Dec. 25. Time, all day; foggy in morning to clear; temp., 73° in A.M., to 80° in P.M. Holboell's Grebe, 4; Loon, 28; Parasitic Jaeger, 2; Herring Gull, 50; Laughing Gull, 125; Royal Tern, 150; Cabot Tern, 75; Common Tern, 100; Florida Cormorant, 100; Brown Pelican, 450; Man-o'-War-Bird, 3; Blue-winged Teal, 6; Lesser Scaup Duck, 50; Ward's Heron, 275; Snowy Egret, 1; Louisiana Heron, 35; Little Blue Heron, 2; Yellow-crowned Night Heron, 4; Sanderling, 80; Semipalmated Sandpiper, 10; Spotted Sandpiper, 1; Willet, 7; Black-bellied Plover 8; Mourning Dove, 5; Ground Dove, 50; Black Skimmer, 18; Bald Eagle, 1; American Sparrow Hawk, 1; Belted Kingfisher, 3; Red-cockaded Woodpecker, 2; Red-bellied Woodpecker, 5; Southern Flicker, 10; Ruby-throated Hummingbird, 1; Phoebe, 6; Florida Blue Jay, 20; Florida Red-wing, 30; Southern Meadowlark, 6; Savannah Sparrow, 30; Chipping Sparrow, 20; White-eyed Towhee, 15; Cardinal, 2; Loggerhead Shrike, 2; White-eyed Vireo, 2; Myrtle Warbler, 65; Palm Warbler, 50; Southern Yellowthroat, 3; Mockingbird, 55; Catbird, 6; Florida Wren, 1; Marian's Marsh Wren, 3; Blue-gray Gnatcatcher, 10; Robin, 200; Bluebird, 85. Total, 53 species, 2,002 individuals.—CARLOS EARLE.

Horseshoe Plantation, 16 miles northwest of Tallahassee, Fla.—Dec. 25; daylight until dark. Overcast all day; rain for the last week; temp., 68°; wind very light, southeast. Country visited: Corn and cotton fields, roadside thickets, live-oak and pine woods, shores of Lake Amonia, swamps, marshes, and meadows. Birds so numerous only minimum estimates given. Mallard, 9; Black Duck, 3; Ring-necked Duck, 300; Sora Rail, 1; Wilson's Snipe, 8; Killdeer, 12; Bob-white, 25; Mourning Dove, 120; Ground Dove, 1; Turkey Vulture, 2; Black Vulture, 50; Marsh Hawk, 3; Red-tailed Hawk, 2; Red-shouldered Hawk, 2; Duck Hawk, 1; Sparrow Hawk, 3; Southern Downy Woodpecker, 2; Red-bellied Woodpecker, 20; Flicker, 15; Phoebe, 15; Florida Blue Jay, 50; Crow, 12; Fish Crow, 1; Florida (?) Red-wing, 500; Southern Meadowlark, 5; Rusty Blackbird, 3; Florida Grackle, 50; Purple Finch, 10; Goldfinch, 22; Pine Siskin, 2 (positively identified); Vesper Sparrow, 25; Savannah Sparrow, 25; White-throated Sparrow, 100; Field Sparrow, 50; Song Sparrow, 25; Swamp Sparrow, 25; Towhee, 50; Cardinal, 50 (singing); Cedar Waxwing, 65; Loggerhead Shrike, 4; Orange-crowned Warbler, 3; Myrtle Warbler, 15; Yellow-throated Warbler, 1; Northern Yellow-throat, 7; Pipit, 75; Mockingbird, 5; Brown Thrasher, 75; Carolina Wren, 25 (singing); Bewick's Wren, 1 (singing); Short-billed Marsh Wren, 3; Carolina Chickadee, 6; Golden-crowned Kinglet, 2; Ruby-crowned Kinglet, 20; Hermit Thrush, 25; Robin, 250; Bluebird, 25. Total, 56 species, at least 2,090 individuals. The following additional species have been seen in last three days. Bittern, 1; Great Blue Heron, 3; Woodcock, 3; Wild Turkey, 25; Sharp-shinned Hawk, 4; Great Horned Owl, 2; Southern Hairy Woodpecker, 1; Grasshopper Sparrow, 2; Solitary Vireo, 1; White-eyed Vireo, 1; Black and White Warbler, 1; Pine Warbler, 1; Palm Warbler, 15; Winter Wren, 1; making in all, a grand total of 70 species found on the plantation around Christmas.—LUDLOW GRISCOM, GRISCOM BETTLE, and LEVERETT SALTONSTALL.

Long Island, Ala. (On Sand Mountain).—Dec. 25; 7.30 A.M. to 12 M., 2.10 to 5 P.M. Misty in the morning but clear about noon; ground bare; wind, south, light; temp., about 50°. Bob-white, 7; Mourning Dove, 5; Sparrow Hawk, 1; Southern Hairy Woodpecker, 1; Red-cockaded Woodpecker, 2; Red-bellied Woodpecker, 1; Flicker, 1; Blue Jay, 1; American Crow, 2; Meadowlark, 8; Goldfinch, 3; White-crowned Sparrow, 1; Tree Sparrow, 14; Junco, 26; Song Sparrow, 2; Cardinal, 7; Mockingbird, 1; Carolina Wren, 5; White-breasted Nuthatch, 3; Tufted Titmouse, 3; Golden-crowned Kinglet, 1;

Robin, 5; Bluebird, 3; all seen within a half mile of my home. Total, 24 species, 109 individuals.—E. W. GRAVES.

Oak Vale, Miss.—Dec. 25; 9 A.M. to 12 M. Cloudy; light south wind; ground bare; temp., 60°. Mourning Dove, 35; Sparrow Hawk, 2; Woodpecker, 7; Pileated Woodpecker, 1; Flicker, 3; Phoebe, 7; Meadowlark, 12; Blue Jay, 6; Field Sparrow, 4; Cardinal, 4; Pine Warbler, 2; Mockingbird, 3; Brown Thrasher, 4; House Wren, 5; Chickadee, 5; Thrush, 4; Robin, 13; Bluebird, 12. Total, 18 species, about 59 individuals.—D. D. FORTENBERRY.

Palacios, Texas.—Dec. 24; one mile of Bayfront; from 10 A.M. to 12 M. Cloudy; no wind; temp., 50°. Herring Gull, 5; Cormorant, 1; Brown Pelican, 8; Canada Goose, 2 flocks; Bittern, 1; Great Blue Heron, 4; Killdeer, 25; Mexican Ground Dove, 2; Mourning Dove, 7; Black Vulture, 50; Marsh Hawk, 2; Sparrow Hawk, 1; Texas Screech Owl, 1; Belted Kingfisher, 2; Flicker, 1; Horned Lark, 4; Meadowlark, great numbers; Rusty Blackbird, great numbers; Great-tailed Grackle, 50; Goldfinches, 100; Sparrows, great number of many kinds not identified; Shrike, 4; Myrtle Warbler, 6; American Pipit, 6 flocks; Mockingbird, 6. Total, 29 species.—Mrs. E. J. SLOAN.

Tonkawa, Okla.—Dec. 25; 1.30 to 3.30 P.M. Cloudy and rainy; wind northeast; temp., about 35°. Bob-white, 1; Marsh Hawk, 1; Sparrow Hawk, 1; Hairy Woodpecker, 2; Downy Woodpecker, 1; Red-bellied Woodpecker, 2; Flicker, 1; Blue Jay, 2; Meadowlark, 2; Tree Sparrow, 20; Song Sparrow, 2; Harris's Sparrow, 100; Cardinal, 3; Logger-headed Shrike, 1; Brown Creeper (?) 1; Chickadee, 3; Robin, 100; Bluebird, 1. Total, 17 species, 243 individuals.—F. B. ISELY.

Wichita, Kan. (along the Ninnescah River).—Dec. 27; 10 A.M. to 4 P.M. Clear; a little snow; very light wind, west; temp., 25°. Bob-white, 9; Krider's Hawk, 1; Downy Woodpecker, 1; Flicker, 4; Crow, 8; Meadowlark, 3; Harris's Sparrow, 25; Towhee, 2; Cardinal, 18; Chickadee, 3; Robin, 4; Bluebird, 12; Total, 12 species, 100 individuals.—MERRILL ISELY.

Maryville, Mo.—Dec. 25; 9 A.M. to 12 M. Fair; four inches of snow; temp., 36°; distance walked, five miles. Hairy Woodpecker, 3; Downy Woodpecker, 6; Red-bellied Woodpecker, 2; Flicker, 1; Blue Jay, 6; Crow, 15; Tree Sparrow, 35; Junco, 40; Brown Creeper, 7; White-breasted Nuthatch, 8; Chickadee, 26; Tufted Titmouse, 12; Robin, 1. Total, 13 species, 163 individuals. (Robins are rarely seen in this vicinity at this time of the year. The one noted was calling from the top of a tree as they usually do in the early spring.)—JOHN E. CAMERON.

Concordia, Mo.—Dec. 25; 1 to 3 P.M. Clear; ground bare; wind east; temp., 38°. Swainson's Hawk, 2; Screech Owl, 1; Downy Woodpecker, 5; Red-bellied Woodpecker, 5; Flicker, 5; Prairie Horned Lark, 65; Crow, 12; Blue Jay, 2; Junco, 38; Tree Sparrow, 11; Cardinal, 8; Brown Creeper, 2; White-breasted Nuthatch, 1; Tufted Titmouse, 13; Chickadee, 14. Total, 15 species, 172 individuals.—FERDINAND SCHREIMAN.

Kansas City, Mo. (Swope Park to Dodson).—Dec. 25; 11 A.M. to 2.30 P.M. Clear; wind northeasterly 12 miles; ground bare; temp., 21 to 29°. Mallard Duck, 1; Bob-white, 2; Turkey Vulture, 2; Red-tailed Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 7; Red-bellied Woodpecker, 5; Flicker, 1; Blue Jay, 1; Crow, 8; Goldfinch, 2; Tree Sparrow, 19; Junco, 242; Cardinal, 18; Cedar Waxwing, 1; Carolina Wren, 11; Brown Creeper, 2; White-breasted Nuthatch, 2; Tufted Titmouse, 32; Black-capped Chickadee, 30; Golden-crowned Kinglet, 2. Total, 21 species, 390 individuals.—MR. and MRS. H. R. WALMSLEY.

St. Louis, Mo. (Creve Cœur Lake).—Dec. 27; 10.15 A.M. to 2.15 P.M. Clear; ground bare; wind west, strong and cold; temp., 24°. Downy Woodpecker, 8; Red-bellied Woodpecker, 4; Flicker, 4; Crow, 12; Red-winged Blackbird, 30; Purple Finch, 4; Tree Sparrow, 50; Junco, 75; Cardinal, 20; Mockingbird, 2; Carolina Wren, 4; Brown

Creepers, 1; White-breasted Nuthatch, 6; Tufted Titmouse, 2; Chickadee, 8; Bluebird, 4. Total, 16 species, 234 individuals.—EDWARD H. CHRISTIE.

Knoxville, Tenn.—Dec. 25; 7 A.M. to 12 M. Cloudy; rain, with alternate glimpses of blue sky; wind, light; temp., 45°. Downy Woodpecker, 2; Flicker, 1; Crow, 1; Junco, 1; Carolina Wren, 2; Brown Creeper, 1; Nuthatch, 1; Tufted Titmouse, 4; Carolina Chickadee, 5; Bluebird, 1. Total, 10 species, 19 individuals.—MAGNOLIA WOODWARD.

Stanton, Ky. (In the mountains of Kentucky).—Dec. 25; 7:35 A.M. to 4:10 P.M. Clear; wind west, light; ground bare; temp., 50°. Mallard, 2; Black Duck, 4; Bob-white, 120; Mourning Dove, 3; Marsh Hawk, 2; Sharp-shinned Hawk, 1; Cooper's Hawk, 2; Red-tailed Hawk, 2; Sparrow Hawk, 4; Great Horned Owl, 1; Blue Jay, 23; Crow, 3; Meadowlark, 2; Rusty Blackbird, 4; Tree Sparrow, 13; Slate-colored Junco, about 200; Song Sparrow, 32; Cardinal, 46; Loggerhead Shrike, 1; Carolina Wren, 2; Tufted Titmouse, 8; Carolina Chickadee, 19; Robin, 64. Total, 23 species, 558 individuals.—V. K. DODGE.

Lexington, Ky.—Dec. 24; 10 A.M. to 4:30 P.M. Clear; ground bare; no wind; temp., 46°. Mourning Dove, 1; Sparrow Hawk, 8; Hairy Woodpecker, 1; Downy Woodpecker, 3; Red-bellied Woodpecker, 2; Horned Lark, 33; Crow, 1,117; Meadowlark, 12; Rusty Blackbird, 1; White-crowned Sparrow, 6; Tree Sparrow, 15; Slate-colored Junco, 18; Song Sparrow, 19; Towhee, 1; Cardinal, 24; Carolina Wren, 4; Carolina Chickadee, 4; Robin, 4. Total, 18 species, 1,273 individuals.—JAS. H. GARDENER and CHAS. K. MORRELL.

Lafayette, Ind.—Dec. 25; 10:30 A.M. to 12:30 P.M. Cloudy; ground bare; no breeze; temp., about 32°. Distance traveled 4 miles, along Wabash River. Crow, 4; Blue Jay, 2; Cardinal, 10; Downy Woodpecker, 6; Slate-colored Junco, 35; Brown Creeper, 4; Titmouse, 15; Bluebird, 3; White-breasted Nuthatch, 2; Song Sparrow, 4; Winter Wren, 1; Black-capped Chickadee, 1; Robin, 1; Flicker, 1; Sparrow Hawk, 1. Total, 15 species, 90 individuals.—M. L. FISHER.

Charlestown, Ind.—Dec. 25; 7 A.M. to 12 M. Cloudy; ground bare; wind west, very light; temp., 40°. Sparrow Hawk, 1; Belted Kingfisher, 1; Downy Woodpecker, 3; Red-bellied Woodpecker, 3; Flicker, 2; Bluejay, 4; American Crow, 45; Meadowlark, 2; Tree Sparrow, 18; Slate-colored Junco, 57; Song Sparrow, 6; Cardinal, 13; Mockingbird, 2; Carolina Wren, 9; Brown Creeper, 2; White-breasted Nuthatch, 3; Tufted Titmouse, 7; Carolina Chickadee, 12; Bluebird, 8. Total, 19 species, 198 individuals.—REV. C. L. CHAPMAN and JOE ALLEN BARNETT.

Fort Wayne, Ind.—Dec. 29; 8 A.M. to 12:40 P.M. Clear; ground bare; wind south, very light; temp., 23°. Hairy Woodpecker, 2; Downy Woodpecker, 8; Flicker, 5; Blue Jay 12; Crow, 2; Goldfinch, 26; Pine Siskin, 15; Tree Sparrow, 71; Slate-colored Junco, 37; Song Sparrow, 20; Cardinal, 3; Brown Creeper, 3; White-breasted Nuthatch, 21; Tufted Titmouse, 20; Chickadee, 13. Total, 15 species, 258 individuals.—CHAS. A. STOCKBRIDGE and A. A. RINGWALT.

Indianapolis, Ind.—Dec. 27; 9:30 A.M. to 12:30 P.M. Cloudy; ground bare; west, very heavy; temp., 23°. Kingfisher, 1; Crow, 16; Cardinal, 4; Chickadee, 4. Total, 4 species, 25 individuals.—ELLIOT R. TIBBETS and ZELLA PITT.

Kokomo, Ind.—Dec. 27. Partly cloudy; ground partly covered with light snow; very high southwest wind; temp., 29°. Distance walked, about 6 miles. High wind probably had something to do with few birds observed. Sparrow Hawk, 1; Downy Woodpecker, 1; Flicker, 10; Blue Jay, 1; Junco, about 110. Total, 5 species, 123 individuals. Especially remarkable for number of Flickers observed in one flock.—B. R. RUSSELL.

Richmond, Ind.—Dec. 25; 9:30 A.M. to 3:30 P.M. Overcast; ground bare; wind southwest, light; temp., 38°. Bob-white, 24; Dove, 12; Screech Owl, 1; Hairy Woodpecker, 3; Downy Woodpecker, 7; Red-bellied Woodpecker, 2; Red-headed Woodpecker,

15; Flicker, 1; Blue Jay, 20; Crow, 10; Goldfinch, 5; Tree Sparrow, 50; Junco, 200; Song Sparrow, 13; Cardinal, 36; Cedar Waxwing, 12; Carolina Wren, 3; Brown Creeper, 1; White-breasted Nuthatch, 1; Tufted Titmouse, 8; Black-capped Chickadee, 80; Golden-crowned Kinglet, 6; Robin, 52; Bluebird, 12. Total, 24 species, 566 individuals.

—L. E. GANS, M. BAXTER, MISS CARPENTER, MRS. J. G. SUTTON, MRS. P. B. COFFIN.

Seymour, Ind. (White River).—Dec. 28; 1.30 to 5 P.M. Clear, sunny day; ground bare; no wind; temp., 30°. American Merganser, 36; Marsh Hawk, 2; Red-tailed Hawk, 1; Downy Woodpecker, 3; Tree Sparrow, 22; Slate-colored Junco, 4; Song Sparrow, 3; Cardinal, 12; Carolina Wren, 1; Tufted Titmouse, 3; Chickadee, 11. Total, 11 species, 98 individuals. On December 7 a male Towhee was seen, and on December 26 a Robin.—JULIUS C. PETER.

Vincennes, Ind.—Dec. 25; 8 A.M. to 12.30 P.M. Cloudy; ground bare and free from frost; wind southwest, light; temp., 42°. Hairy Woodpecker, 1; Downy Woodpecker, 7; Red-bellied Woodpecker, 6; Northern Flicker, 1; Blue Jay, 10; Crow, 17; Goldfinch, 2; Tree Sparrow, 18; Slate-colored Junco, 17; Song Sparrow, 12; Cardinal, 16; Mockingbird, 2; Carolina Wren, 8; Brown Creeper, 1; Tufted Titmouse, 14; Carolina Chickadee, 3; Golden-crowned Kinglet, 3. Total, 17 species, 138 individuals.—CORNELIUS F. POSSON.

Attica, Ohio.—Dec. 25; 1 to 4 P.M. Cloudy; ground bare; wind south-southwest, light; temp., 40°. Mourning Dove, 2; Barred Owl, 1; Hairy Woodpecker, 3; Red-headed Woodpecker, 8; Flicker, 11; Blue Jay, 2; Tree Sparrow (one flock of 53); White-breasted Nuthatch, 3; Tufted Titmouse, 1. Total, 9 species, 84 individuals.—ROLLA LOZIER.

Berlin Center and Elsworth, Ohio.—Dec. 29; 10 A.M. to 4 P.M. Film of snow on ground; wind southwest; temp., 26°; distance walked, 8 miles. Bob-white, 10; Ruffed Grouse, 2; Mourning Dove, 1; Red-tailed Hawk, 1; Screech Owl, 1; Hairy Woodpecker, 9; Downy Woodpecker, 13; Red-headed Woodpecker, 40; Red-bellied Woodpecker, 10; Flicker, 10; Blue Jay, 5; Crow, 59; Tree Sparrow, 74; Junco, 1; Song Sparrow, 5; Towhee, 6; White-breasted Nuthatch, 31; Red-breasted Nuthatch, 6; Tufted Titmouse, 6; Black-capped Chickadee, 3. Total, 20 species, 292 individuals.—ERNEST WATERS VICKERS.

Canton, Ohio.—Dec. 25; 7 A.M. to 3 P.M. Cloudy; ground practically bare; wind southwest, light; temp., 40°. Sparrow Hawk, 1; Kingfisher, 1; Hairy Woodpecker, 1; Downy Woodpecker, 5; Blue Jay, 1; Tree Sparrow, 200; Junco, 5; Song Sparrow, 16, (one singing); Cardinal, 15; Winter Wren, 1; Brown Creeper, 3; White-breasted Nuthatch, 7; Tufted Titmouse, 3; Chickadee, 2; Golden-crowned Kinglet, 11; Robin, 36. Total, 16 species, 308 individuals.—EDWARD D. KIMES.

Cadiz, Ohio.—Dec. 25; 10.40 A.M. to 12.40 P.M. Cloudy; about two inches of snow on the ground; wind, southwest, light; temp., 35°. Hairy Woodpecker, 1; Downy Woodpecker, 6; Yellow-bellied Sapsucker, 1; Red-bellied Woodpecker, 6; Flicker, 2; Prairie Horned Lark, 5; Crow, 8; Blue Jay, 2; Tree Sparrow, 115; Junco, 65; Song Sparrow 11; Cardinal, 4; Carolina Wren, 2 (sings); White-breasted Nuthatch, 10; Tufted Titmouse, 12; Chickadee, 14; Robin, 40; Bluebird, 20. Total, 18 species, 325 individuals. We found the skunk cabbage growing, and the dandelions in bloom.—HARRY B. McCONNELL and JOHN WORLEY.

Cincinnati, Ohio.—Dec. 25; 8.30 to 11.15 A.M. Snowing, ground slightly covered; strong southwest wind; temp., 20°. Bob-white, 16; Downy Woodpecker, 1; Crow, 3; Junco, 4; Song Sparrow, 10; Cardinal, 14; Carolina Wren, 7; Tufted Titmouse, 8; Carolina Chickadee, 6; Robin (?) 1. Total, 10 species, 70 individuals.—HOWARD LAWLESS.

Chardon, Ohio.—Dec. 25; 8 A.M. to 1 P.M. Cloudy; ground bare; thawing; wind southwest; temp., 45°. Great Horned Owl, 1; Hairy Woodpecker, 4; Downy Woodpecker

12; Red-headed Woodpecker, 6; Blue Jay, 5; Crow, 2; Song Sparrow, 7; Brown Creeper, 6; White-breasted Nuthatch, 23; Red-breasted Nuthatch, 2; Black-capped Chickadee, 8. Total, 11 species, 70 individuals. —B. G. R. REED.

Canton, Ohio.—Dec. 26; 7.15 A.M. to 12.45 P.M. Cloudy; ground bare; wind east, light; temp., 38°, distance covered, 9 miles. Red-tailed Hawk, 1; Sparrow Hawk, 1; Kingfisher, 1; Hairy Woodpecker, 2; Downy Woodpecker, 3; Blue Jay, 3; Tree Sparrow, 800; Slate-colored Junco, 100; Song Sparrow, 11; Cardinal, 17; Cedar Waxwing, 1; Winter Wren, 1; Brown Creeper, 4; White-breasted Nuthatch, 12; Tufted Titmouse, 1; Black-capped Chickadee, 15; Golden-crowned Kinglet, 25; Robin, 6. Total, 18 species, 1,005 individuals. —JAMES A. CALHOUN and ROBT. A. HENNESSY.

Cleveland, Ohio.—Dec. 25; 10 A.M. to 3.30 P.M. Cloudy; wind southwest, moderate; ground bare; temp., 38°; distance walked, eleven miles. Herring Gull, 3; Downy Woodpecker, 1; Flicker, 1; Song Sparrow, 2; Brown Creeper, 1; White-breasted Nuthatch, 3; Chickadee, 4. Total, 7 species, 15 individuals. —SHERIDAN F. WOOD.

Delaware, Ohio.—Dec. 25; 3 to 4.30 P.M. Clear; ground bare; temp., 40°. Sparrow, Hawk, 1; Downy Woodpecker, 3; Red-headed Woodpecker, 4; Red-bellied Woodpecker, 1; Flicker, 1; Blue Jay, 6; Song Sparrow, 3; Cardinal, 3; Carolina Wren, 1; Tufted Titmouse, 1; Robin, 1. Total, 11 species, 20 individuals. —HARRY HIPPLE.

Huron, Ohio.—Dec. 26; 8.45 A.M. to 4 P.M. Cloudy; becoming misty and rainy in P.M.; ground bare; wind east, light; temp., 39°. Horned Grebe, 1; Herring Gull, 3; Red-tailed Hawk, 1; Sparrow Hawk, 1; Downy Woodpecker, 1; Northern Flicker, 5; Blue Jay, 3; Tree Sparrow, 100; Song Sparrow, 4; Cardinal, 8; Robin, 27. Total, 11 species, 154 individuals. —H. G. MORSE and ROLLAND PIERCE.

Laceyville, Ohio.—Dec. 24; 1 to 4 P.M. Cloudy; two inches of snow; wind, very light, south; temp., 36°. Bob-white, 12; Red-tailed Hawk, 1; Hairy Woodpecker, 2; Downy Woodpecker, 10; Flicker, 1; Red-bellied Woodpecker, 12; Tree Sparrow, 115; Junco, 25; Song Sparrow, 10; Cardinal, 5; Goldfinch, 4; Towhee, 3; Carolina Wren, 3; White-breasted Nuthatch, 15; Tufted Titmouse, 15; Chickadee, 10; Robin, 25; Bluebird, 2. Total, 18 species, 270 individuals. —E. E. SMITH.

Lisbon, Ohio.—9 A.M. to 12 M. Cloudy; ground bare; wind light; temp., 35°. Downy Woodpecker, 3; American Goldfinch, 11; Tree Sparrow, 10; Slate-colored Junco, 12; Song Sparrow, 5; Cardinal, 4; Carolina Wren, 1; Brown Creeper, 3; White-breasted Nuthatch, 3; Tufted Titmouse, 5; Chickadee, 15; Golden-crowned Kinglet, 6. Total, 12 species, 75 individuals. —C. A. WHITE and ROBERT J. HOLE.

Lochbourne, Ohio.—Dec. 25; 8.30 to 11.30 A.M. Cloudy; air very heavy; temp., 30°; distance covered, 22 miles. (Very hard to use binoculars, so that sometimes the species could not be ascertained if the birds were far distant). Duck, 3; Blue Jay, 2; Cardinal Grosbeak, 5; Tree Sparrow, 11; Song Sparrow, 20; 37 flocks of Tree and Song Sparrows; Goldfinch, 2; Carolina Wren, 5. Total, 7 species, 186 individuals. —ALBERT R. SHADLE.

Millersburg, Ohio.—Dec. 28; 9.30 A.M. to 4 P.M. Nine-mile circle, south of town. A clear, bright day; cool, about 18° in A.M., 30° at M., 15° in evening; very light fall of snow on the ground. Ruffed Grouse, 1; Hairy Woodpecker, 1; Downy Woodpecker, 7; Red-headed Woodpecker, 4; Red-bellied Woodpecker, 2; Flicker, 1; Blue Jay, 50, estimated; Goldfinch, 1; Tree Sparrow, 15; Slate-colored Junco, 200, estimated; Song Sparrow, 15; Towhee, 15; Cardinal, 7; Carolina Wren, 3; Brown Creeper, 3; White-breasted Nuthatch, 3; Tufted Titmouse, 13; Chickadee, 6; Robin, 1,000; estimated; Bluebird, 6. Total, 20 species, 1,353 individuals. —RUSKIN S. and C. A. FREER.

New Paris, Ohio.—Dec. 25; 9 to 11 A.M. Cloudy; ground bare and wet; temp., 40°. Sharp-shinned Hawk, 2; Sparrow Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 3; Blue Jay, 4; Crow, 19; Slate-colored Junco, 1; Song Sparrow, 7; Cardinal, 5; Black-capped Chickadee, 8; Robin, 48. Total, 11 species, 99 individuals. —W. H. WISMAN.

Salem, Ohio.—Dec. 25; 6.45 to 11 A.M. Partly cloudy, later overcas; ground bare;

wind southeast, light; temp., 34°; six-mile walk. Downy Woodpecker, 3; Blue Jay, 3; Song Sparrow, 1; Tree Sparrow, 6; White-breasted Nuthatch, 6. Total, 6 species, 19 individuals.—CHAS. CONKLE.

Salem, Ohio.—Same conditions as above. Nine-mile walk. Downy Woodpecker, 6; Hairy Woodpecker, 1; Red-bellied Woodpecker, 1; Crow, 4; Blue Jay, 8; Goldfinch, 25; Song Sparrow, 5; Cardinal, 4; Tree Sparrow, 25; Towhee, 2 males and 2 females; White-breasted Nuthatch, 11; Tufted Titmouse, 8; Black-capped Chickadee, 2; Robin, 1. Total, 14 species, 105 individuals.—H. W. WEISGERBER.

Salem, Ohio.—Dec. 26; 9.30 A.M. to 12 M. Conditions practically as above; three-mile walk. Ruffed Grouse, 3; Blue Jay, 14; Black-capped Chickadee, 2; Tufted Titmouse, 2; Golden-crowned Kinglet, 4. Total, 5 species, 15 individuals.—THE MISSES FIELD, EDNEY and COOK.

Winchester, Ohio.—Dec. 25; 9.15 A.M. to 12.30 P.M. Cloudy; ground bare; wind west, very light; temp., 56°. Quail, 1; Hairy Woodpecker, 3; Downy Woodpecker, 2; Red-bellied Woodpecker, 4; Flicker, 5; Crow, 4; Bronzed Grackle, 3; Tree Sparrow, 26; Slate-colored Junco, 27; Song Sparrow, 5; Cardinal, 6; Mockingbird, 2; Carolina Wren, 6; Brown Creeper, 1; Tufted Titmouse, 10; Carolina Chickadee, 4; Bluebird, 14. Total, 17 species, individuals (estimated 123).—I. W. DELP.

Youngstown, Ohio.—Dec. 25; 6.30 A.M. to 4 P.M. Clear until 8 A.M., cloudy rest of day; ground bare; wind south; temp., 36°. Distance walked, 18 miles; by automobile, 24 miles. Bob-white, 12; Ruffed Grouse, 1; Red-tailed Hawk, 2; Screech Owl, 1; Kingfisher, 1; Hairy Woodpecker, 4; Downy Woodpecker, 8; Red-headed Woodpecker, 24; Red-bellied Woodpecker, 2; Flicker, 5; Blue Jay, 17; Crow, 21; Goldfinch, 44; Tree Sparrow, 70; Slate-colored Junco, 40; Song Sparrow, 2; Towhee, 3; Cardinal, 13; Carolina Wren, 1; Winter Wren, 1; Brown Creeper, 3; White-breasted Nuthatch, 46; Tufted Titmouse, 7; Black-capped Chickadee, 23; Golden-crowned Kinglet, 16; Robin, 2. Total, 26 species, 369 individuals.—GEO. L. FORDYCE.

Sidney, Ohio.—Dec. 23; 8.15 to 10 A.M. Partly cloudy; wind southwest, light; temp., 32°. Downy Woodpecker, 3; Blue Jay, 10; Crow, 22; Tree Sparrow, 6; Song Sparrow, 3; Junco, 3; Cardinal, 8; Robin, 1. Total, 8 species, 56 individuals.—MARY MCCracken and FARIDA WILEY.

Ann Arbor, Mich. (to Chicago, Ill., via Interurban and L. S. & M. S.).—Dec. 20; 7 A.M. to 6 P.M. Cloudy; light northwest wind; light snow on the ground; temp., about 25°. Hairy Woodpecker, 1; Prairie Horned Lark, 9; Blue Jay, 3; Tree Sparrow, 12; Junco, 1; White-breasted Nuthatch, 5; Black-capped Chickadee, 2. Total, 7 species, 33 individuals.—ELIZABETH and FRANK C. GATES.

Benzonia, Mich.—Dec. 25; 9 A.M. to 12 M., 2 to 4 P.M. Clear; ground lightly covered with snow; wind west, moderate; temp., 28 to 33°. Herring Gull, 20; Bonaparte Gull, 50; Whistler, 4; Bob-white, 16; Hairy Woodpecker, 2; Downy Woodpecker, 3; Blue Jay, 5; White-breasted Nuthatch, 3; Red-breasted Nuthatch, 1; Chickadee, 3. Total, 10 species, 107 individuals.—ELIHU LINKLETTER.

Detroit, Mich. (Ford Farm, nine miles west of the city).—Dec. 24; 8.30 to 11.30 A.M. Cloudy; ground bare; wind southwest, light; temp., 29°. Dec. 25; 10 A.M. to 12.30 P.M. (Ford farm, one mile east of Sunday's observation). Cloudy; ground bare; wind westerly, light; temp., 31°. Herring Gull (over Detroit River), 6; Bob-white, 17; Mourning Dove, 62; Marsh Hawk, 3; Red-tailed Hawk, 1; Red-shouldered Hawk, 2; Downy Woodpecker, 19; Hairy Woodpecker, 5; Flicker, 6; Blue Jay, 17; Crow, 36; Goldfinch, 5; White-throated Sparrow, 2; Tree Sparrow, 140; Field Sparrow, 2; Song Sparrow, 6; Fox Sparrow, 2; Cardinal, 2; Brown Creeper, 2; White-breasted Nuthatch, 47; Tufted Titmouse, 1; Chickadee, 32; Golden-crowned Kinglet, 2; Robin, 1. Total, 24 species, 408 individuals.—JEFFERSON BUTLER.

Grand Junction, Mich. (Silver and Saddle Lakes).—Dec. 25; 10.30 A.M. to 1 P.M.

Clear; wind southwest; light, hazy; ground bare, except in woods; temp., 38 to 56°. Herring Gull, 9; Ring-billed Gull, 1; Downy Woodpecker, 1; Blue Jay, 2; Crow, 4; Goldfinch (flock), 10; Tree Sparrow, 2; Red-breasted Nuthatch, 1; Chickadee, 6. Total, 9 species, 36 individuals.—BERTHA E. SHAW and S. L. DAVIS.

Hillsdale, Mich.—Dec. 26; 9 to 10 A.M. Cloudy; sleeting; east winds; temp., 30°. Hairy Woodpecker, 2; Downy Woodpecker, 3; Blue Jay, 15; Song Sparrow, 1; White-breasted Nuthatch, 2; Chickadee, 25. Total, 6 species, 48 individuals.—BERTRAM A. BARBER.

Jackson Co., Mich. (Northwest portion of Tompkins Township).—Dec. 24; 9.30 A.M. to 12 M. Clear; ground bare, slightly frozen; wind, southwest; temp., 34°. Character of locality visited, oak woods. Hawk (unidentified), 1; Blue Jay, 3; White-breasted Nuthatch, 3; Chickadee, 25; Robin, 2. Total, 5 species, 34 individuals.—CARRIE A. REYNOLDS.

Kalamazoo, Mich.—10 A.M. to 1 P.M. Cloudy; ground bare; wind north, light; temp., 40°. Herring Gull, 2; Hairy Woodpecker, 1; Blue Jay, 5; Crow, 150; White-bellied Nuthatch, 3; Robin. Total, 6 species, 162 individuals.—W. E. PRAEGER

South Haven, Mich.—Dec. 24; 8.15 to 11 A.M. Clear; ground bare; wind east, light temp., 40°. Herring Gull, 8; Tree Sparrow, 15; Evening Grosbeak, 18; Chickadee, 5; White-breasted Nuthatch, 1; Blue Jay, 3; Cardinal, 1; Screech Owl, 1. From 3 to 4 P.M., Goldfinches, 10. Total, 9 species, 45 individuals.—MRS. A. D. WILLIAMS.

Chicago, Ill. (Jackson Park and vicinity).—Dec. 25; 9.30 A.M. to 1.30 P.M. Clear; ground bare, except for small patches of old snow in some places; light westerly wind; temp., 32° to 34°. Herring Gull, 37; Ring-billed Gull, 12; Bonaparte's Gull, 5; Hooded Merganser, 5; Downy Woodpecker, 1; Prairie Horned Lark, 10; Blue Jay, 1; Tree Sparrow, 3. Total, 8 species, 74 individuals.—F. A. PENNINGTON.

Chicago, Ill. (Des Plaines River in Leyden Township and Graceland Cemetery).—Dec. 23; 8.30 A.M. to 3 P.M. Cloudy; west wind; ground bare; temp., 28°. Herring Gull, 1; Downy Woodpecker, 2; Prairie Horned Lark, 7; Blue Jay, 2; Crow, 6; Junco, 3; Tree Sparrow, 184; Song Sparrow, 1; White-breasted Nuthatch, 2; Black-capped Chickadee, 3. Total, 10 species, 211 individuals.—FRANK C. GATES.

Decatur, Ill.—Dec. 25. Cloudy; no snow, freezing; wind northwest, light. Hairy Woodpecker, 3; Northern Downy Woodpecker, 5; Blue Jay, 8; Crow, 8; Tree Sparrow, 10; Slate-colored Junco, 22; Cardinal Grosbeak, 4; Tufted Titmouse, 19; Chickadee, 20. Total, 9 species, 99 individuals.—DEAN GORHAM and WALTER J. RISLEY, JR.

Quiver Lake, Chautauqua Park, Havana, Ill.—Dec. 24; 2 to 4 P.M. Clear; ground bare; wind southeast, light; temp., 42°. Herring Gull, 4; Hairy Woodpecker, 1; Downy Woodpecker, 1; Red-bellied Woodpecker, 2; Flicker, 1; Blue Jay, 2; Crow, 4; Tree Sparrow, 8; Slate-colored Junco, 12; Cardinal, 3; White-breasted Nuthatch, 2; Tufted Titmouse, 1; Black-capped Chickadee, 2; Robin, 7. Total, 14 species, individuals, 50.—BESSIE M. PRICE and FRANK M. PRICE.

Milford, Ill.—Dec. 25; 9 A.M. to 3 P.M. Ground bare; partly cloudy; calm; temp., 35°. Bob-white, 14; Red-tailed Hawk, 6; American Rough-legged Hawk, 1; Hairy Woodpecker, 4; Downy Woodpecker, 21; Red-headed Woodpecker, 1; Red-bellied Woodpecker, 3; Flicker, 3; Prairie Horned Lark, 8; Blue Jay, 8; Crow, 67; Purple Finch, 45; Tree Sparrow, 80; Slate-colored Junco, 38; Song Sparrow, 2; Cardinal, 13; Brown Creeper, 2; White-breasted Nuthatch, 16; Tufted Titmouse, 67; Black-capped Chickadee, 3; Robin, 3. Total, 21 species, 405 individuals.—H. C. HENDERSON.

Peoria, Ill.—Dec. 27; 8.30 A.M. to 4 P.M. Morning, clear; afternoon, cloudy; slight sprinkling of snow on ground; cold, brisk west wind; temp., 19° to 12°. Herring Gull, 30; Belted Kingfisher, 1; Hairy Woodpecker, 1; Downy Woodpecker, 4; Tree Sparrow, 6; Slate-colored Junco, 35; Song Sparrow, 1; Cardinal, 16; Brown Creeper, 2; White-

breasted Nuthatch, 1; Tufted Titmouse, 5; Black-capped Chickadee, 10; Robin, 1. Total, 13 species, 113 individuals.—JAMES H. SEDGWICK and DONALD L. SEDGWICK.

Rock Island, Ill.—Dec. 25. Clear; ground bare; wind northwest, light; temp., 22°. at 9 A.M. R. I. Arsenal (Island) 9 A.M. to 12 M., Mississippi river full of floating ice. Bob-white, 62; Ring-necked Pheasant (introduced), 10; Rough-legged Hawk, 1; Barred Owl, 1; Hairy Woodpecker, 4; Downy Woodpecker, 10; Red-bellied Woodpecker, 2; Blue Jay, 1; Crow, 2; Red Crossbill, 1; Goldfinch, 4; Tree Sparrow, 25; Junco, 35; Cardinal, 6; Brown Creeper, 5; White-breasted Nuthatch, 5; Tufted Titmouse, 2; Chickadee, 28. Total, 18 species, 204 individuals.—BURTIS H. WILSON.

Rockford, Ill.—Dec. 27; 12.30 to 4.30 P.M. Clear; thin coating of snow and ice on ground; wind west to northwest, high; temp., 14° to 7°. Hairy Woodpecker, 2; Downy Woodpecker, 3; Blue Jay, 1; Tree Sparrow, 2; White-breasted Nuthatch, 2; Chickadee, 2. Total, 6 species, 12 individuals.—JENNIE E. WALDO, CHARLES GREGORY, LOTTIE B. GREGORY, EDITH P. SOVEREIGN.

Rantoul, Ill.—Dec. 25; 7 A.M. to 1 P.M. Cloudy; ground bare; wind north, light; temp., 28 to 35°. Sora, 1; Sharp-shinned Hawk, 1; Red-tailed Hawk, 1; Barred Owl, 1; Screech-Owl, 1; Hairy Woodpecker, 18; Northern Downy Woodpecker, 20; Red-headed Woodpecker, 3; Red-bellied Woodpecker, 3; Flicker, 5; Prairie Horned Lark, 40; Blue Jay, 9; Crow, 72; Lapland Longspur, 10; Tree Sparrow, 150; Slate-colored Junco, 132; Song Sparrow, 1; Cardinal, 8; Bewick's Wren, 1; Winter Wren, 1; Red-breasted Nuthatch, 5; Tufted Titmouse, 8; Black-capped Chickadee, 7; Golden-crowned Kinglet, 2; Robin, 65. Total, 25 species, 570 individuals.—GEORGE E. EKBLAW, VICTOR CARLSON, W. ELMER EKBLAW.

Baraboo, Wis.—Dec. 25. 8.40 to 11.30 A.M. Partly cloudy; ground bare; wind southwest, moderate; temp., 20 to 30°. Ruffed Grouse, 1; Screech Owl, 1; Blue Jay, 1; Crow, 8; Goldfinch, 25; Lapland Longspur, 11; Tree Sparrow, 12; Junco, 9; White-breasted Nuthatch, 2; Chickadee, 8. Total, 10 species, 78 individuals.—D. C. MABBOTT.

Barron, Wis.—Dec. 22; 8 A.M. to 4 P.M. Temp., 8 to 32°; wind southeast to south, light; ground covered with snow. Ruffed Grouse, 3; Hairy Woodpecker, 2; White-winged Crossbill, 1; Blue Jay, 4; Slate-colored Junco, 8; Black-capped Chickadee, 8; White-breasted Nuthatch, 3. Total, 8 species, 54 individuals.—L. S. CHENEY.

Belvit, Wis.—Dec. 25; 10.30 A.M. to 12 M. Clear; ground bare; wind southwest, light; temp., 32°. Downy Woodpecker, 12; Blue Jay, 4; Junco, 10; White-breasted Nuthatch, 6; Chickadee, 8; Robin, 2. Total, 6 species, 42 individuals.—S. BELLE CLARKE.

Cottage Grove, Wis.—Dec. 25; 7 A.M. to 4.30 P.M. Clear; wind southeast, light; ground bare and dry; temp., 30°. Bob-white, 7; Marsh Hawk, 1; Red-tailed Hawk, 1; Long-eared Owl, 1; Screech Owl, 5; Woodpecker, 3; Downy Woodpecker, 8; Sapsucker, 1; Prairie Horned Lark, 6; Blue Jay, 13; Crow, 34; Red-winged Blackbird, 1; Goldfinch, 2; Pine Siskin, 7; Lapland Longspur, 7; Tree Sparrow, 346; Junco, 11; Northern Shrike, 2; Loggerhead Shrike, 1; Brown Creeper, 1; White-breasted Nuthatch, 8; Red-breasted Nuthatch, 1; Chickadee, 18. Total, 24 species, 487 individuals.—JOHN E. MELLISH.

Darlington, Wis.—Dec. 26; 9 A.M. to 3 P.M. Clear; ground bare; wind northwest, light; temp., 28°. Downy Woodpecker, 1; Flicker, 1; Crow, 13; Blue Jay, 5; White-breasted Nuthatch, 5; Chickadee, 30. Total, 6 species, 65 individuals.—SUSANNE ORTON and JEAN M. COOKE.

Elkhorn, Wis.—Dec. 24; 2 to 4 P.M. Clear; ground partially covered with snow; wind south, brisk; temp., 60°. Hairy Woodpecker, 1; Downy Woodpecker, 3; Blue Jay 2; Crow, 75; Slate-colored Junco, 1; White-breasted Nuthatch, 1. Total, 6 species, 83 individuals.—SARAH FRANCIS, HELEN MARTIN, and MARY NORTEN.

Green Lake, Wis.—Dec. 30; 8 A.M. to 1 P.M. West wind, strong; ground bare;

temp., 0°. Hairy Woodpecker, 2; Downy Woodpecker, 2; Red-bellied Woodpecker, 1; Blue Jay, 2; Crow, 2; Brown Creeper, 1; White-breasted Nuthatch, 3; Chickadee, 5; Golden-crowned Kinglet, 1; Robin, 1. Total, 10 species, 20 individuals.—GEO. H. EIGENBERGER.

Hartland, Wis.—(Along wooded shores of Beaver and Pine Lakes).—Dec. 26; 8 A.M. to 3.30 P.M. Ground snow-covered; east wind, strong, with snow and sleet storm; temp., 32°. Blue Jay, 6; Crow, 6; Purple Finch, 11; Tree Sparrow, 9; Junco, 10; Fox Sparrow, 1; Brown Creeper, 2; White-breasted Nuthatch, 2; Chickadee, 5. Total, 9 species, 52 individuals.—SUSIE L. SIMONDS.

Madison, Wis.—Dec. 26; 10.30 A.M. to 4.30 P.M. Snowing, strong north wind. Bob-white, 9; Blue Jay, 12; Crow, 1; Goldfinch, 2; Tree Sparrow, 20; Slate-colored Junco, 8; Black-capped Chickadee, 8. Total, 8 species, 160 individuals.—A. C. BURRILL; C. E. BROWN; R. E. KREMERS.

Milwaukee, Wis.—Dec. 24; 8.20 to 11.30 A.M. Wind south, very light; cloudy, bright; ground bare; temp., 30°. Herring Gull, 696 (three of them four miles inland); Golden-eye Duck, 125; Screech Owl, 1 (6 A.M.); Downy Woodpecker, 1; Crow, 3. Total, 5 species, 826 individuals.—I. N. MITCHELL.

Berlin, Wis.—Dec. 25; 8 A.M. Ground bare; wind southeast, light; temp., 40°. Downy Woodpecker, 1; Blue Jay, 2; Bohemian Waxwings and Juncos here the last week in November.—MRS. C. W. HITCHCOCK.

Johnson's Creek, Wis.—Dec. 24; 10 A.M. to 12 M. Wind southwest; clear; temp., 32°. Open farm land. Bob-white, 1; Hairy Woodpecker, 1; Blue Jay, 5; Crow, 6; Rusty Grackle, 1; Snow Bunting, 15; Tree Sparrow, 5. Total, 7 species, 34 individuals.—JOHN L. HOOPER.

Wauwatosa, Wis.—Dec. 25; 7 A.M. to 5 P.M. Ground bare; wind south, light; temp., 43°. Herring Gull, 58; Chicken Hawk, 1; Screech Owl, 1; Hairy Woodpecker, 1; Downy Woodpecker, 2; Crow, 8; Blue Jay, 16; Pine Siskin, 8; Junco, 2; Loggerhead Shrike, 1; Winter Wren, 1; White-breasted Nuthatch, 3; Red-breasted Nuthatch, 1; Chickadee, 2; Robin, 1. Total, 15 species, 114 individuals.—ESTHER TENNYSON.

Westfield, Wis.—Dec. 19; 8 to 11.30 A.M. Sunshine; ground bare; wind west, light; temp., 14°. Hairy Woodpecker, 2; Downy Woodpecker, 3; Prairie Horned Lark, 2; Blue Jay, 5; Crow, 7; White-breasted Nuthatch, 2; Chickadee, 6; Golden-crowned Kinglet, 2. Total, 8 species, 29 individuals.—PATIENCE NESBIT.

Winneconne, Wis.—Dec. 25; 8 A.M. to 2 P.M. Clear; wind west, light; ground bare; cows in pasture; temp., 22°. Herring Gull, 1; Downy Woodpecker, 3; Blue Jay, 4; Crow, 9; Snow Bunting, 6; Chickadee, 5; White-breasted Nuthatch, 3; Brown Creeper, 3; Robin, 4. Total, 8 species, 38 individuals.—MR. and MRS. HENRY P. SEVERSON.

Westfield, Wis.—Dec. 24; 3 to 5 P.M. Ground bare; wind southwest, light; temp., 30°. Ruffed Grouse, 37; Junco, 3; Hairy Woodpecker, 1; Downy Woodpecker, 1; Northern Shrike, 1; Golden-crowned Kinglet, 2. Total, 6 species, 45 individuals.—AGNES E. RUSSELL.

Minneapolis, Minn.—Dec. 26; 10 A.M. to 2 P.M. Snowing heavily; wind northeast; temp., 17°. Blue Jay, 1; Purple Finch, 8; Brown Creeper, 1; White-breasted Nuthatch, 2; Chickadee, 3. Total, 5 species, 15 individuals.—RAY VAN TUYL and SIGURD UELAND.

Minneapolis, Minn. (Minnehaha Falls and Lake Nokomis).—Dec. 25; 9.30 A.M. to 12.30 P.M. Clear; six inches of snow; wind brisk and shifting; temp., 2°. Blue Jay, 5; Crow, 3; Tree Sparrow, 3; Northern Shrike, 1; Brown Creeper, 2; White-breasted Nuthatch, 7; Chickadee, 6. Total, 7 species, 27 individuals.—CHARLES PHILLIPS.

Oslo, Minn.—Dec. 26; 11 A.M. to 4 P.M. Clear and calm; about ten inches of snow; temp., zero. Hairy Woodpecker, 1; Downy Woodpecker, 2; Blue Jay, 2; Brown Creeper, 2; White-breasted Nuthatch, 5. Total, 5 species, 12 individuals.—OLE A. FINSETH.

Royalton, Minn.—Dec. 25; 11 A.M. to 12 M. Clear; ground, snow covered; strong

west wind; temp., 8°. Downy Woodpecker, 1; Blue Jay, 5; Redpoll, 100; (estimated); White-breasted Nuthatch, 3; Chickadee, 5. Total, 5 species, 114 individuals.—HARRY LOGAN, JR.

Des Moines, Iowa.—Dec. 26; 12.30 to 4.30 P.M. Cloudy; snowing all day, six inches on ground; brisk northeast wind; temp., 27 to 22°. Hairy Woodpecker, 1; Blue Jay, 1; Crow, 1; Tree Sparrow, 1; Slate-colored Junco, 26; Brown Creeper, 2; White-breasted Nuthatch, 1; Chickadee, 2. Total, 8 species, 35 individuals.—E. A. STONER.

Sabula, Iowa.—Dec. 24; 1 to 5 P.M. Clear; ground bare; wind south, light; temp., 45°. Blue-billed Duck, 12; Downy Woodpecker, 3; Hairy Woodpecker, 2; Crow, 1; Blue Jay, 1; Cardinal, 10; Tree Sparrow, 25; Goldfinch, 6; Junco, 50; Brown Creeper, 3; White-breasted Nuthatch, 8; Chickadee, 35; Robin, 5. Total, 13 species, 161 individuals.—MRS. H. R. REBMAN.

Sioux City, Iowa.—Dec. 24; 10 A.M. to 3.30 P.M. Clear; six inches of snow on ground; moderate northwest wind; temp., 15°. Prairie Hen, 12; Hairy Woodpecker, 1; Downy Woodpecker, 2; Prairie Horned Lark, 8; Blue Jay, 2; Crow, 15; Tree Sparrow, 30; Northern Shrike (carrying portions of a small bird in its beak), 1; Brown Creeper, 5; White-breasted Nuthatch, 5; Chickadee, 12. Total, 11 species, 93 individuals.—ARTHUR LINDSEY and WALTER W. BENNETT.

Wall Lake, Iowa.—Dec. 26; 11 A.M. to 4.30 P.M. Cloudy; four to six inches of snow; slight southwest breeze; temp., 22°. Prairie Chicken, about 32; Screech Owl, 1; Horned Lark, 35, in a mixed flock with about 15 Longspurs, (species?); Crow, 2; Snow Bunting, 1; Tree Sparrow, 35. Total, 7 species, 121 individuals.—JOHN A. SPURRELL.

Lincoln, Neb.—Dec. 25; 8.15 A.M. to 4.15 P.M. Cloudy; ground covered with snow, crust; no wind; temp., 14° to 24°. Distance walked, sixteen miles. Hairy Woodpecker, 1; Downy Woodpecker, 9; Flicker, 1; Prairie Horned Lark, 55; Blue Jay, 2; Crow, 20; Meadowlark, 5; Tree Sparrow, 65; Junco, 26; Song Sparrow, 5; Brown Creeper, 6; White-breasted Nuthatch, 5; Chickadee, 19. Total, 13 species, 219 individuals.—REED WELLS and CLARENCE A. MORROW.

Sioux Falls, S. D.—Dec. 25; 2.30 to 5.30 P.M. Cloudy; ground snow-covered; wind from south, light; temp., 16°. Prairie Chicken, 125; Short-eared Owl, 1; Hairy Woodpecker, 2; Downy Woodpecker 3; Flicker, 2; Prairie Horned Lark, heard, 1; Crow, 7; Tree Sparrow, 200; White-breasted Nuthatch, 3; Chickadee, 15. Total, 10 species, 359 individuals.—ADRIAN LARSON.

Sioux Falls, S. D.—Dec. 24; 10.15 A.M. to 1 P.M. Clear; ground snow-covered; wind northwesterly, brisk; temp., about 20°. Prairie Chicken, 54; Hairy Woodpecker, 1; Downy Woodpecker, 1; Crow, 1; Tree Sparrow, 45; Brown Creeper, 1; White-breasted Nuthatch, 1; Chickadee, 1. Total, 8 species, 105 individuals.—ADRIAN LARSON.

Boulder, Col.—Dec. 25; 8.45 A.M. to 4 P.M. Pine mesas and bottomland. Snowsqualls; ground lightly covered; wind, southerly, sharp; temp., 19°. Rough-legged Hawk, 1; Belted Kingfisher, 1; Rocky Mt. Hairy Woodpecker, 1; Red-shafted Flicker, 7; Desert Horned Lark, 1; Magpie, 60; Long-crested Jay, 13; Pink-sided Junco, 9; Gray-headed Junco, 1; Western Tree Sparrow, 7; Mountain Song Sparrow, 4; Dipper, 1; Cañon Wren, 3; Rocky Mt. Creeper, 3; Long-tailed Chickadee, 1; Mountain Chickadee, 1; Townsend's Solitaire, 7 (one singing); Western Robin, 6. Total, 18 species, 127 individuals.—NORMAN DEW. BETTS.

Bozeman, Mont.—Dec. 25; 11 A.M. to 3 P.M. Cloudy; six inches of snow; wind northwest, light; temp., 22°. Red-shafted Flicker, 1; Magpie, 14; Bohemian Waxwing, 35 (the Bohemian Waxwing is a common winter visitor here, large flocks being seen every winter); Northern Shrike, 1; Long-tailed Chickadee, 15; Mountain Chickadee, 2. Total, 6 species, 68 individuals.—NELSON LUNDWALL.

Bozeman, Mont.—Dec. 26; 9 A.M. to 12.30 P.M. Clear; no wind; four inches of snow; temp., 15°. Wilson's Snipe, 5; Red-shafted Flicker, 2; Magpie, 18; Western Crow, 120;

Redpoll, 75; Western Tree Sparrow, 115; Mountain Song Sparrow, 6; Bohemian Waxwing, 400; Long-tailed Chickadee, 44; Townsend's Solitaire, 1; Western Robin, 3. Total, 11 species, 789 individuals.—ARETAS A. SAUNDERS.

Great Falls, Mont.—Dec. 25; 12 M. to 2 P.M. Fair; snow in air; wind northwest, light; two degrees above zero. Golden-eye, 27 (on Missouri River); Hawk, 1 (unidentified); Downy Woodpecker, 3; Magpie, 4; Northern Shrike, 5; Ruby-crowned Kinglet, 150 (one flock). Total, 6 species, 210 individuals.—BERNERS B. KELLY.

Okanagan Landing, B. C.—Dec. 25; 8.30 A.M. to 4 P.M. Fair; three inches of snow in valley, twelve inches in foothills; temp., 30°, max., 38°; fresh southwest wind; 18 miles covered. Greater Scaup, 150, estimated; Redhead, 6; Mallard, 1; Herring Gull, 4; Short-eared Owl, 1; Richardson's Grouse, 1; Canadian Ruffed Grouse, 1; Cabanis' Woodpecker, 1; Batchelder's Woodpecker, 2; Red-shafted Flicker, 2; Black-billed Magpie, 36; Black-headed Jay, 1; American Crow, 6; Clarke's Nutcracker, 10, estimated; Western Meadowlark, 2; Alaskan Pine Grosbeak, 17; Rusty Song Sparrow, 22; Western Tree Sparrow, 0; American Crossbill, 15, estimated; Rocky Mountain Nuthatch, 4; Red-bellied Nuthatch, 40, estimated; Mountain Chickadee, 30, estimated; Black-capped Chickadee, 2; Interior Marsh Wren (*plesius*), 1; Bohemian Waxwing, 20, estimated; Townsend's Solitaire, 1. Total, 26 species, 385 individuals.—JAS. MUNRO and ALLAN BROOKE.

Vancouver, B. C.—Dec. 10; 10.30 A.M. to 3.30 P. M. Drizzling rain; ground bare; wind east, light; temp., 42°. Ring-necked Pheasant, 1; Harris's Woodpecker, 1; Northwest Crow, 20; Western Meadowlark, 1; Pine Siskin, 20; Rusty Song Sparrow, 5; Oregon Towhee, 15; Western Winter Wren, 7; Oregon Chickadee, 6; Western Golden-crowned Kinglet, 40; Western Robin, 5; Varied Thrush, 6. Total, 12 species, 127 individuals.—A. W. ABBS.

Fresno, Cal.—Dec. 24; 11.30 A.M. to 1.30 P.M. Clear; light northwest wind; temp., 53°. Distance traveled, five miles along public road. Killdeer, 7; Valley Quail, 4; Mourning Dove, 5; Sharp-shinned Hawk, 1; Western Red-tail Hawk, 1; Burrowing Owl, 2; Sierra Sapsucker, 1; Red-shafted Flicker, 4; Black Phoebe, 1; Western Meadowlark, 100; Brewer Blackbird, 20; House Finch, 150; Green-backed Goldfinch, 10; Western Savannah Sparrow, 1; Western Vesper Sparrow, 6; Western Lark Sparrow, 5; Gambel Sparrow, 225; Sierra Junco, 20; Heermann Song Sparrow, 3; San Diego Towhee, 7; California Towhee, 2; California Shrike, 4; Audubon Warbler, 200; American Pipit, 40; Ruby-crowned Kinglet, 2; Dwarf Hermit Thrush, 1. Total, 26 species, 822 individuals.—MR. and MRS. JOHN G. TYLER.

Marysville, Cal.—8 A.M. to 12 M., 2.45 to 3.45 P.M. Clear; heavy frost; wind, light, north, changing to south; temp., 34°. Pied-billed Grebe, 2; White-fronted Goose, 5; Hutchins's Goose (?), 16; Cackling Goose, 35; Great Blue Heron, 10; American Coot, 46; Wilson Snipe, 1; Spotted Sandpiper, 1; Killdeer, 13; Valley Partridge, 27; Turkey Vulture, 3; Marsh Hawk, 1; Sharp-shinned Hawk, 2; Western Red-tail, 3; Swainson's Hawk, 5; Prairie Falcon, 2; Pigeon Hawk, 3; Desert Sparrow Hawk, 3; Belted Kingfisher, 1; Gairdner Woodpecker, 1; Nuttall's Woodpecker, 4; Red-breasted Sapsucker, 1; California Woodpecker, 7; Red-shafted Flicker, 73; Western Black Phoebe, 4; Yellow-billed Magpie, 9; California Jay, 4; California Crow, 6; Bicolored Blackbird, 335; Tricolored Blackbird, 4; Western Meadowlark, 850; Brewer Blackbird, 105; California Linnet, 6; California Goldfinch, 37; Green-backed Goldfinch, 23; Western Vesper Sparrow, 7; Western Savannah Sparrow, 330; Western Lark Sparrow, 4; Gambel's, and Golden-crowned Sparrow, 425; Thurber's Junco, 325; Heermann's Song Sparrow, 15; Spurred Towhee, 48; California Towhee, 25; Northern Shrike, 2; California Shrike, 4; Audubon's Warbler, 26; Pipit, 435; Vigor's Wren, 17; Interior Tule Wren, 2; Sierra Creeper, 1; Plain Titmouse, 1; Pallid Wren-Tit, 3; Ruby-crowned Kinglet, 21; Western Gnatcatcher, 2; Audubon's Hermit Thrush, 1; Western Bluebird, 5. Total, 60 species, 3,337 individuals.—CARL and JULIUS M. ELLER.

Los Angeles, Cal.—Dec. 24; 8 A.M. to 4 P.M. Wind northwest, strong; clear; temp., 55°. Shoveller, 25; Pintail, 2; Scaup Duck, 15; Coot, 200; Killdeer, 31; Desert Sparrow Hawk, 2; Red-breasted Sapsucker, 1; Red-shafted Flicker, 17; Anna's Hummingbird, 5; Cassin's Kingbird, 1; Black Phoebe, 5; Western Meadowlark, 15; Brewer's Blackbird, 220; House Finch, 100; Arkansas Goldfinch, 21; Western Lark Sparrow, 15; Gambel's Sparrow, 35; Thurber's Junco, 30; Spurred Towhee, 1; Anthony's Towhee, 13; California Shrike, 3; Audubon's Warbler, 35; Pacific Yellow-throat, 1; Mockingbird, 5; California Bush-Tit, 15; Ruby-crowned Kinglet, 6; Western Robin, 25. Total, 27 species, 836 individuals.—CARYL H. RIPLEY.

Redlands, Cal.—Dec. 27; 7 A.M. to 5 P.M. Clear; wind, light, south; temp., 28°. Ruddy Duck, 1; Killdeer, 2; Valley Quail, 15; Cooper's Hawk, 1; Western Red-tail, 2; Desert Sparrow Hawk, 1; Red-breasted Sapsucker, 2; Red-shafted Flicker, 14; White-throated Swift, 47; Anna's Hummingbird, 17; Say's Phoebe, 6; Western Black Phoebe, 2; California Horned Lark, 20; California Jay, 8; Western Meadowlark, 16; House Finch, 175; Green-backed Goldfinch, 99; Willow Goldfinch, 10; Western Vesper Sparrow, 2; Intermediate Sparrow, 246; Golden-crowned Sparrow, 165; Western Chipping Sparrow, 2; Thurber's Junco, 8; San Diego Song Sparrow, 14; purred Towhee, 7; Anthony's Towhee, 83; Cedar Waxwing, 12; Hutton's Vireo, 2; Audubon Warbler, 98; Pacific Yellow-throat, 2; Pipit, 13; Western Mockingbird, 12; Pasadena Thrasher, 1; Rock Wren, 1; Southwest Bewick's Wren, 7; Plain Titmouse, 2; California Bush-Tit, 14; Wren-Tit, 8; Ruby-crowned Kinglet, 22; Western Gnatcatcher, 3; Alaska Hermit Thrush, 8; Western Robin, 98; Western Bluebird, 8. Total, 43 species, about 1,185 individuals.—ALLEN G. SMITH.

Santa Barbara, Cal.—Dec. 23; 6.30 A.M. to 6 P.M. Clear; light west wind at 10 A.M., freshening to gale at 5 P.M.; temp., min. 41° (frost near seashore), max. 58°. Course: Stearns' wharf, the Estero, Mission Cañon, Laguna Blanca, Carpinteria. Western Grebe, 15; Eared Grebe, 3; Pied-billed Grebe, 16; Loon, 2; Pacific Loon, 3; Red-throated Loon, 2; Glaucous-winged Gull, 1; Western Gull, 100; Herring Gull, 1; California Gull, 2; Ring-billed Gull, 40; Short-billed Gull, 30; Heermann's Gull, 12; Bonaparte's Gull, 40; Royal Tern, 40; Forster's Tern, 4; Pacific Fulmar, 6; Farallon Cormorant, 60; Brandt's Cormorant, 3; California Brown Pelican, 8; Baldpate, 300; Green-winged Teal, 60; Cinnamon Teal, 1; Shoveller, 750; Pintail, 1,000; Red-head, 1; Canvasback, 200; Lesser Scaup Duck, 100; Ring-necked Duck, 6; Bufflehead, 20; Scoter, 2; White-winged Scoter, 2; Surf Scoter, 12; Ruddy Duck, 200; Treganza Blue Heron, 8; Black-crowned Night Heron, 6; Sora, 3; Coot, 300; Least Sandpiper, 6; Sanderling, 40; Western Willet, 2; Golden Plover, 1; Killdeer, 20; Snowy Plover, 3; Valley Quail, 1; Mourning Dove, 2; Turkey Vulture, 1; Cooper Hawk, 3; Western Red-tailed Hawk, 1; Pigeon Hawk, 2; Desert Sparrow Hawk, 8; Burrowing Owl, 1; Cabanis's Woodpecker, 1; Willow Woodpecker, 2; Red-breasted Sapsucker, 1; California Woodpecker, 30; Lewis's Woodpecker, 1; Red-shafted Flicker, 12; White-throated Swift, 100; Anna's Hummer, 4; Say's Phoebe, 10; Black Phoebe, 18; Belding's Jay, 40; San Diego Redwing, 40; Western Meadowlark, 80; Brewer's Blackbird, 200; House Finch, 2,000; Willow Goldfinch, 3; Green-backed Goldfinch, 20; Western Savannah Sparrow, 3; Belding's Sparrow, 3; Large-billed Sparrow, 6; Gambel's Sparrow, 120; Nuttall's Sparrow, 40; Golden-crowned Sparrow, 1; San Diego Song Sparrow, 20; Lincoln's Sparrow, 1; San Diego Towhee, 15; Anthony's Towhee, 60; Tree Swallow, 20; California Shrike, 14; Hutton's Vireo, 1; Dusky Warbler, 2; Audubon's Warbler, 200; Western Yellow-throat, 9; Pipit, 40; Western Mockingbird, 5; California Thrasher, 6; San Diego Wren, 6; Tule Wren, 3; Plain Titmouse, 5; Bush-tit, 20; Wren-tit, 4; Ruby-crowned Kinglet, 18; Western Gnatcatcher, 6; Monterey Hermit Thrush, 2; Western Robin, 50; Varied Thrush, 9; Western Bluebird, 3. Total, 100 species, 6,700 individuals.—WILLIAM LEON DAWSON and STEWART EDWARD WHITE.

The Migration of North American Sparrows

FOURTEENTH PAPER

Compiled by Professor W. W. Cooke, Chiefly from Data in the Biological Survey

With Drawings by LOUIS AGASSIZ FUERTES

(See frontispiece)

RED CROSSBILL

The Red Crossbill is a well-known wanderer; in fact, many of its movements are wanderings, as distinguished from true periodic migrations. It breeds locally along the whole Alleghany range, from Georgia to New England, and during the winter season invades the lower districts both to the east and the west. These invasions are exceedingly variable as to frequency, time of the year, and number of individuals. This Crossbill is also probably the most irregular of all North American birds in its time of nesting. At Craftsbury, Vt., it was found nesting in February; at Stephentown, N. Y., a bird, on July 12, was found to contain an egg nearly ready to lay; in Yellowstone Park, Wyo., young were noted just out of the nest in August; at Flathead Lake, Mont., eggs were collected July 27, 1903; while eggs must sometimes be deposited in December, or even November, since a young bird taken at Monument, Colo., January 5, 1893, was only a day or two from the nest.

SPRING MIGRATION

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Yemassee, S. C.....			May 22, 1887
Mt. Pleasant, S. C.....			May 26, 1900
Raleigh N. C.....			June 5, 1887
Lynchburg, Va.....			May 7, 1902
Washington, D. C.....	5	May 17	June 30, 1884
Philadelphia, Pa.....	2	May 22	June 8, 1884
Englewood, N. J. (near).....	3	May 13	June 18, 1910
Mandeville, La.....			March 27, 1888
Clinton, Ark.....			May 5, 1890
Shannon County, Mo.....			May 1, 1907
Northern Illinois.....	5	April 19	May 30, 1888
Northern Indiana.....	5	April 24	April 29, 1890
Oberlin, O.....	3	May 16	May 25, 1897
Columbus, O.....			June 18, 1878
Southern Michigan.....	5	April 30	June 1, 1888
Milwaukee, Wis.....			May 25, 1885
Central, Iowa.....	6	May 1	May 16, 1897
Manhattan, Kan.....			April 23, 1892
Lincoln, Neb.....			May 21, 1899
Lamar, Col.....			July 15, 1898

FALL MIGRATION

PLACE	Number of years' record	Average date of fall arrival	Earliest date of fall arrival
Montauk, N. Y.....			September 19
New Providence, N. J.....			August 1, 1893
Morristown, N. J.....			October 20, 1909
Philadelphia, Pa.....	2	November 26	November 25, 1888
Washington, D. C.....	3	November 21	October 10, 1887
Aiken, S. C.....			November 12, 1887
Camden County, Ga.....			November 12, 1906
Fernandina, Fla.....			December 4, 1906
Ann Arbor, Mich.....			October 10, 1899
Southern Wisconsin.....	3	October 18	October 15, 1904
Lanesboro, Minn.....	4	November 13	October 25, 1891
Falls City, Neb.....			November 7, 1891
Central Kansas.....	2	November 15	November 13, 1885
Central Iowa.....	5	November 3	October 2, 1888
Chicago, Ill.....	3	October 27	October 6, 1906
Cleveland, O.....			October 31, 1887
New Haven, Mo.....			October 5, 1903
Lexington, Ky.....			October 25, 1903
Waco, Tex.....			December 24, 1886

WHITE-WINGED CROSSBILL

The White-winged Crossbill is much rarer than the Red; its breeding area lies, for the most part, north of the United States, but it breeds sparingly in Maine, the White Mountains, and the Adirondacks. It does not range so far south in winter as the Red Crossbill, the southern limit being marked by North Carolina, Kansas, and Oregon, and it is much less often seen and in smaller numbers. It has a very variable nesting season, since young were found in the nest at Wolfville, Nova Scotia, January 31, and eggs May 7. In the valley of the Kowak River, Alaska, the earliest eggs were found May 28, 1899.

SPRING MIGRATION

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Raleigh, N. C.....			February 23, 1907
Erie, Pa.....			March 22, 1875
Princeton, N. J.....			March 20, 1900
Lower Hudson Valley, N. Y.....			May 29, 1900
Brookline, Mass.....			May 12, 1883
La esboro, Mass.....			June 4, 1900
Newtonville, Mass.....			June 13, 1869
Johnston, R. I.....			February 24, 1900
St. ohnsburg, Vt.....	3	April 9	May 28, 1888
Southern Maine.....	2	March 11	April 9, 1905
Shannon County, Mo.....			April 18, 1907
Central Illinois.....	3	March 17	March 30, 1885
Oberlin, O.....			April 10, 1892
Michigan City, Ind.....			June 26, 1884
Madison, Wis.....			June 3, 1909
Big Sandy, Mont.....			April 22, 1905

FALL MIGRATION

PLACE	Number of years' record	Average date of fall arrival	Earliest date of fall arrival
Southern Maine.....	5	November 7	August 22, 1908
Dublin, N. H.			September 15, 1897
Roxbury, Mass.			November 4, 1882
Norwich, Conn.			December 7, 1880
Montauk Point, N. Y.			November 7, 1899
Warren, Pa.	5	October 15	November 1, 1906
Near Anacostia, D. C.			August 11, 1907
Aweme, Manitoba,			October 7, 1906
Lanesboro, Minn.			November 23, 1887
Big Sandy, Mont.			September 12, 1905
Hays City, Kan.			September 15, 1902
La Grange, Mo.			November 10, 1899

Notes on the Plumage of North American Sparrows

THIRTEENTH PAPER

By FRANK M. CHAPMAN

(See frontispiece)

Crossbill (*Loxia curvirostra*, Figs. 1-3). The juvenal, or nestling plumage of both sexes of this species suggests that of a female Purple Finch rather than that of a Crossbill, being streaked with dusky and with no trace of red. By a molt of the body feathers, this plumage is followed by the first winter plumage (Fig. 2), with its widely varying mixture of red and green and yellow, never exactly alike in any two specimens.

First nuptial plumage is acquired by wear, which, as Dwight has shown, has the effect of brightening the whole plumage through a loss of the grayish barbules.

The adult plumage (Fig. 1) is gained at the first postnuptial, that is, second fall, molt, and there is no further change in the color of the bird aside from that produced by the wear just mentioned.

The female passes from the streaked nestling plumage into first winter plumage, which, while averaging a little duller, is essentially like that of the adult (Fig. 3).

The two American races of Crossbill stand in the A. O. U. Check-List as follows:

Loxia curvirostra minor (Brehm). *Range*: Northern North America. Breeds from central Alaska, northern Mackenzie, central Ungava, and Newfoundland, south to California (Sierra Nevada and San Bernardino Mountains), southern Colorado, Michigan, and in the Alleghanies of northern Georgia (casually in Massachusetts, Maryland, and Virginia); winters irregularly south to southern California, New Mexico, northern Texas, Louisiana, and Florida; casual in Lower California, Guadalupe Island, and Bermuda.

Loxia curvirostra stricklandi Ridgw. *Range*: High mountains of Arizona (San Francisco, Chirachaua, Santa Catalina, and Mogollon mountains), central New Mexico, western Texas, and the higher mountains of Mexico to Chancus, Guatemala.

White-winged Crossbill (*Loxia leucoptera*, Figs. 4-6). The plumage changes of this species are similar to those which the Red Crossbill undergoes. The juvenal plumage is similarly streaked, but there are pronounced buffy wing-bars, which are replaced by white bars at the postjuvenal molt. This brings the bird into the mottled plumage well shown by Figure 5, which is comparable with Figure 2, of the Red Crossbill.

The range of the White-winged Crossbill is given in the A. O. U. Check-List as follows:

Northern North America. Breeds in Boreal zones from the limit of tree in northern Alaska, northern Mackenzie, central Keewatin, and northern Ungava, south to southern British Columbia, southern Alberta, central Ontario, New York (Adirondacks), New Hampshire (White Mountains) southern Maine, and southern Nova Scotia; winters in much of its breeding-area and southward irregularly to northern Oregon (Cascades), Nevada, Colorado, Kansas, southern Illinois, southern Ohio, and North Carolina; more or less frequent in Greenland, British Isles, and Heligoland.



Book News and Reviews

A NATURALIST ON DESERT ISLANDS. By PERCY A. LOWE. Witherby & Co., 326 High Holborn, London. xii+300 pages; 3 maps, 32 plates.

This is an admirable book. Its author is evidently well equipped for the work in hand, and it seems to us that he has succeeded to an exceptional degree in conveying to his readers no small measure of the keen enjoyment with which he explored desert islands, and, at the same time, he has presented attractively the more salient facts in regard to their formation, and the probable origin of their plant and animal life. The islands in question are Swan, Blanquilla, and the Hermanos, all in the Caribbean Sea. Mr. Lowe visited them while cruising in the West Indies as the guest of Sir Frederic Johnstone on the yacht 'Zenaida,' and his observations make not alone most interesting reading, but a truly valuable contribution to the study of island life. Mr. Lowe writes as a naturalist rather than as an ornithologist, but it is obvious that birds have the strongest claim on his attention, and his book, therefore, will appeal particularly to ornithologists.

We are not surprised that Mr. Lowe should find it difficult to account for the alleged breeding of *Dendroica tigrina* in Jamaica, and *Setophaga ruticilla* in Dominica, for it is quite improbable that either record is correct.

Mr. Lowe's descriptions of the plumage of the Man-o'-war-bird seem to require revision, and we believe he will find that the young birds of both sexes have the head and neck white, while the adult female has the head black with the breast and sides white. Consequently, the photograph facing page 214 is that of a young, not an "old" female, while an adult female is shown in the plate facing page 211.

We trust that Mr. Lowe will continue his natural history explorations. He has far too facile a pen to warrant its going out of commission.—F. M. C.

THE NATURAL HISTORY AND ANTIQUITIES OF SELBORNE IN THE COUNTY OF SOUTHAMPTON. By GILBERT WHITE. With illustrations in color by George Edward Collins, R. B. A., Macmillan & Co. 1911. Roy. 8vo., x+476 pp.; 24 pls.

Mr. Collins has taken characteristic bits from the Gilbert White country as subjects for his paintings, and it is eminently appropriate that they should be published with the text which they so admirably illustrate. White's work is not to be annotated or edited. He told his own story too plainly and directly to require the services of a commentator, but we may accept Mr. Collins' charming sketches as both appropriate and desirable accompaniments to the latest edition of this classic work. Those of the landscape convey most pleasing impressions of the pastoral scenery in which Selborne is so fortunately placed, while those of the birds show, it seems to us, a rare gift of placing figures of birds, of which any ornithologist would approve, in a setting such as only a true artist would select. When one adds that these sketches are evidently well reproduced, it is clear that we have here an unusually attractive book.—F. M. C.

THE HOME-LIFE OF THE OSPREY. Photographed and Described by CLINTON G. ABBOTT. With some photographs by Howard H. Cleaves. Witherby & Co., 326 High Holborn, London, W. C., 1911. Sm. 4to. 54 pages, 32 plates. For sale by Brentano and by Forest and Stream Pub. Co.

This, the third volume in the Witherby Home-Life Series, is of particular interest to American readers, since it not only treats of an American species but is based on studies made in America. After a residence in Great Britain, where the Osprey is on the verge of extinction, Mr. Abbott expresses his surprise at the abundance and familiarity of this fine bird near New York City; and when it is remembered that no "economic" argument can be advanced for its protection, it is indeed gratifying to realize

that the Osprey makes a sufficiently strong appeal to our love of wild-life to win it immunity from attack, such as no other of our Hawks enjoys. Mr. Abbott's studies were made mainly on Gardiner's Island; and those who have had the fortune to visit this now famous bird resort will bear witness to the skill with which he describes the traits of its most distinguished feathered inhabitant, to a knowledge of whose home-life he here makes so valuable a contribution.

Mr. Abbott's text is supplemented by forty-three admirable and tastefully mounted half-tones.—F. M. C.

BIRD STUDIES FOR HOME AND SCHOOL. Sixty Common Birds, their Haunts and Habits. By HERMAN C. DEGROAT, Principal Grammar School, No. 31, Buffalo, New York. Published by the author. Sm. 4to., 146 pages; 60 plates.

Mr. DeGroat tells us that "this book is the outgrowth of four years of experience in the preparation of bird lessons for a city school of more than two thousand pupils." He thus has had the inestimable advantage of addressing a definite audience, and of learning what they want as well as what they do *not* want—which is quite as important!

After introductory sections on "Directions to Teachers," "The Usefulness of Birds," "Migration of Birds," "Birds' Nests and Eggs," and the "Enemies of the Birds," Mr. DeGroat devotes from one to two pages to each of sixty common birds, beginning with permanently resident species and adding the migrants in the order of their arrival. These biographies are accompanied by Mumford color plates of the species treated, and at their end a blank space is left for "Bird Notes," a feature which should encourage recording the original observation the book is well designed to stimulate.—F. M. C.

The Ornithological Magazines

THE AUK.—Since its inception in 1884, this journal has been edited by Dr. J. A. Allen, and, for eight years prior to 1884,

Dr. Allen was editor of the 'Bulletin of the Nuttall Ornithological Club,' its predecessor; so that for thirty-six consecutive years the destinies of North American ornithology have been guided by a master hand. Fortunate indeed has it been for science in general, and for ornithology in particular, that so able and so painstaking an editor could be found. Few of us realize the cares and responsibilities of such a post, or know the labor involved in merely keeping abreast of the great volume of literature that swells in bulk from day to day. Nevertheless, the reviews in 'The Auk,' chiefly written by Dr. Allen himself, would make a good bibliography of the ornithological literature of the past thirty-six years. The time has come when he wishes to shift the editorial mantle to other shoulders, and it has now fallen upon those of Mr. Witmer Stone. We feel that such a change should not be lightly passed over, and we may be pardoned for taking this opportunity of expressing our profound respect and admiration for Dr. Allen and his work, which we feel sure is also felt by ornithologists and mammalogists the world over and, at the same time we congratulate the American Ornithologists' Union on securing in Mr. Stone so worthy a successor.

The January issue is quite up to the usual standard. It opens with an obituary notice of Mr. Henry A. Purdie, by Mr. Wm. Brewster. There is a portrait of Mr. Purdie, who was one of the old-school ornithologists, and best known to members of the 'Nuttall Club.' The passing of Prof. C. O. Whitman, of whom there is a half-tone, is also noticed by Mr. R. Strong.

Mr. Alfred O. Gross presents 'Observations on the Yellow-billed Tropic-bird *Phaethon americanus* Grant) at the Bermuda Islands.' Careful studies of the birds, especially of the development of nestlings, are illustrated by some good plates. Aviators should read Mr. Wm. Brewster's 'Notes on the Flight of Gulls,' in which stress is laid on their ability to glide into the teeth of a gale without the use of so much as a single wing beat.

The local lists are numerous, comprising one on the summer birds of the St. John valley, New Brunswick; a similar one, by Mr. Edw. Arnold, on those of Newfoundland; and still another, by Mr. H. B. Bailey, on those of the mountains of Virginia. Mr. D. Iseley also has 'A List of the Birds of Sedgwick Co., Kansas'—208 in all. There are, besides, some general notes, by several authors, that help fill out earlier lists.

Mr. J. Grinnell, under title 'A Name for the Hawaiian Linnet' calls it *Carpodacus nutans*, and Mr. John Sage presents his report on the twenty-ninth meeting of the A. O. U., recently held in Philadelphia.—J. D., Jr.

THE CONDOR. The last two numbers of volume XIII of 'The Condor' are more than usually replete with interesting notes on water birds contained in accounts of trips to the Farallones, Anacapa and Santa Cruz Islands, and San Jacinto Lake, California; San Quentin Bay, Lower California; and the Barr Lakes, Colorado.

The September number opens, with a brief description, by M. E. Peck, of a hybrid Mountain and Valley Quail, secured April 1, 1911, near Burns, Oregon. A. B. Howell's paper on 'Some Birds of the San Quentin Bay Region,' mentions "scores of thousands" of Cormorants on San Martin Island, April 26, 1910, and the fact that the Black Brant is present in incredible numbers during the winter months at this the southernmost point of its range. Warren's 'Colorado Horned Owl Notes' are based on observations made in 1901 and 1902 near Paonia, on the North Fork of the Gunnison River. Willett and Jay's 'May Notes from San Jacinto Lake' contain important breeding records of the Red-head Duck and Least Bittern. In Swarth's 'Field Notes from South-Central California,' in Kern and San Luis Obispo counties, are several additions to our knowledge of the distribution of typical desert birds in the San Joaquin Valley, notably Leconte's Thrasher, which was found eight miles north of Bakersfield and at McKittrick

on the southwestern border of the valley. Burt's 'Early Spring Trip to Anacapa Island,' made in March, 1911, notes the presence of Brown Pelicans in considerable numbers at the same place where the birds were found the previous season. As many of the birds were seen carrying sea weed, for repairing their old nests, the records of the birds nesting on the Santa Barbara Islands, both in 1910 and 1911, are reasonably satisfactory. Among the brief notes, Dawson records the capture of an Ovenbird and a Black-throated Green Warbler on the Farallones, on May 29, both species 'new to the state;' and Linton, the capture of two live Man-o'-war-birds at Long Beach, on June 13, 1911.

The November number is, in reality, a double number, and brings the volume up to the size of that of its predecessors. Dawson's 'Another Fortnight on the Farallones,' with its observations on forty-three species, is a notable contribution to the list of papers on this far-famed bird colony. The California Murre, instead of being the most abundant species on South Farallon, is given third rank, with an estimated number of 20,000; while the Ashy Petrel, here named Coues Petrel, is given second rank, and Cassin's Auklet, whose numbers are estimated at not less than 100,000, is placed first. A few Kaeding's Petrels were present, and the colony of Farallon Cormorants on Maintop, always small, was found to be reduced to about thirty-five pairs. Kennedy describes 'Some Robins' and Mourning Doves' Nests in the Lower Yakima Valley;' Rockwell denotes the second part of his 'Nesting Notes on the Ducks of the Bair Lake Region, Colo.,' chiefly to the Pintail and Red-head, both of which species have increased in recent years; and Howell and Van Rossen contribute 'Further Notes from Santa Cruz Island,' supplementing Linton's list of 1908. Bryant's paper, entitled 'Relation of Birds to an Insect Outbreak in Northern California,' is an unusually interesting contribution to economic ornithology.—T. S. P.

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Contributing Editor, MABEL OSGOOD WRIGHT

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Bird-Lore's Motto:

A Bird in the Bush Is Worth Two in the Hand

THE "Universal Feather Co.," of Philadelphia, openly, one might indeed say brazenly, invites the public at large to join it in breaking the spirit, if not the letter of the law, which prohibits the sale of aigrettes in New York State. This concern, we understand, is composed of New York feather dealers whose business, having become illegal in New York State, has been transferred to Pennsylvania.

With an obvious, and possibly to be expected, failure to realize the real question at issue, the Universal Feather Co. assures prospective patrons that "We take *all* the responsibility, *you* take *none*," and we wonder whether the purchasers of its wares are as blind to the absurdity of this statement as its makers seem to be.

ADVOCATES of commercial forestry methods in our National Parks should remember that these areas have been set aside by the Government, not as investments in timber, but as investments in nature. The bird-lover, as well as the tree-lover, has rights in these Parks, which should not be violated by a too rigid application of purely economic principles. We want forests, not groves.

IN view of the fact that the National Association of Audubon Societies, as we think, very properly refused to administer the sum of \$25,000 annually for the seasonal protection of game birds on

behalf of the arms and ammunition companies of this country, it is a satisfaction to know that, through the formation of the American Game Protective and Propagation Association, this large amount of money is not to be lost to the cause of bird protection. This organization is composed mainly of sportsmen, and its object is primarily not only to prevent the decrease but to promote the increase of game birds, to the end that their shooting may not tend to diminish the supply.

It is needless to say that many members of the Audubon Societies do not approve of the killing of game birds under any conditions; and for this reason, if for no others, it was not possible for the National Association to become the agents of the donors of the fund in question. But we must deal with man in the light of his inheritance, and not expect the rank and file to measure up to the highest standard thus far attained. If the past, through the present, throws any light toward the future, beyond question the most humane-minded have reason to be encouraged. In the meantime, recognizing the imperfections of human nature, let the most tender-hearted sentimentalist join hands with the less sympathetic but possibly more practical sportsman in every honest effort to preserve wild life!

No one can read a summary of the work performed by the Biological Survey during 1911 without being impressed by the value to the country of this branch of the Federal service. As an increasing population removes us farther and farther from natural conditions, so does the penalty exacted by nature for the violation of laws become greater and increasingly difficult to avoid.

Mr. Henshaw, Chief of the Survey, comments particularly on the importance of increasing our insectivorous birds, and as steps toward this end, recommends that artificial nesting-sites be provided; that thickets of berry-bearing shrubs and trees should be planted along the roadside, or in waste places on the farm.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, at 53 Arlington Avenue, Providence, R. I.

PLANS FOR THE NEW YEAR

In the encouraging reports from our State Audubon Societies, which appear as a part of the annual report of the National Association, in the last issue of BIRD-LORE, two ideas are brought out with especial emphasis, namely: *the importance of nature-study and the need of trained workers.*

To quote from the Maryland report: "Nature-study in the public schools is proving the most effective factor in accomplishing the goal toward which every Audubon Society is striving;" and, from the Illinois report: "We greatly need a real, live missionary, to travel through the state and talk to schools, clubs, Farmers' Institutes, etc."

A marked advance has been made, of late, toward the realization of both these ideas. Public sentiment is much more in favor of nature-study in the schools, as well as of organized, efficient work along the line of the conservation of natural resources. There are only a few states, however, which can as yet lay claim to either a comprehensive nature-study course in their schools, or salaried field-workers. Fewer yet can boast of having both.

This is a time of large opportunities. It is also a time of large giving. In making plans for the year, why not welcome the one and take advantage of the other?

Michigan is seeking to establish its Audubon Society with a permanent endowment. This is not only good business policy, it is also the most practical way of attaining the ends for which Audubon Societies are organized.

Is it too ambitious a plan to appoint a committee in each society, to raise an endowment fund of twenty-five thousand dollars? The interest on such a sum would insure the salary of one trained worker in each state, a worker such as California reports, whose entire time would be devoted to educational effort in schools, granges, the legislature and elsewhere.

Other organizations raise much larger sums of money to carry on various kinds of educational work. Has not the time arrived when the Audubon Societies of this country may look to the public for a like confirmation of their aims?

Whether funds of this kind be raised by appeals to persons of means, or in small amounts on the apportionment plan, or in some other way, it ought not to be a discouraging task if undertaken with confidence and enthusiasm.

At present, the average resources of our state Societies are barely adequate,

and not always that, to pay the current expenses of correspondence and distribution of literature, and to maintain a relatively small line of educational work.

With permanent endowments in our Audubon societies, which, once established, ought to be gradually added to instead of decreased, the progress of nature-study and bird-protection could not fail to be greatly accelerated, while the results which might be obtained by a body of trained field-workers throughout the country can hardly be estimated.

Is this plan too large to meet the present opportunities? Who shall say?

A. H. W.

FOR TEACHERS AND PUPILS

As has been suggested heretofore, in schools where no definite time is set aside for nature-study, the most successful method of teaching this subject seems to be by correlation with other studies.

In view of the fact that so many teachers have to meet this condition, a series of exercises in which nature-study will be correlated with other branches is to be presented in this department. It is hoped that these exercises will be practical as well as suggestive. Teachers are invited to send in criticisms and also, methods of teaching nature-study which they have personally tested.

Exercise I. The Coming of Spring

Correlated Studies: Physiography and Geography

THE WEATHER

What is the weather? There are many things which we can see, such as houses and what is in them; some things which we can hear but cannot see, such as music; still other things which we can smell but can neither see nor hear, such as the fragrance of flowers; and many things which we feel but do not see, hear or smell, as, for example, the softness of a cushion or the prickliness of a thorn.

The weather is something which we feel more than we see or hear or smell, although at times we may see parts of it, hear parts of it, and even smell some of it.

The weather is really not *a thing* at all, but only a state, or condition, of something. This something is the air we breathe, and the air far up above us which we could not breathe and live, and the air around not only us but also the entire earth.

All of these kinds of air together are called *the atmosphere*, and you must learn to think of the air or atmosphere as something which is movable, which can be made hot or cold, wet or dry, which has weight and height, and which

may be dense, that is, thick and pressed together, or, on the contrary, thin and light.

If the air all over and around the earth was of exactly the same degree of heat or cold (temperature), and of exactly the same weight (pressure), and of exactly the same wetness or dryness (humidity), as well as of exactly the same thickness (density), it would have no motion at all and there would be only one kind of weather everywhere.

But this is never the case. The air may be very heavy in one place and very light in another; or, it may be quiet where you live, while moving at a



BIRD-BOX PROTECTED FROM CATS

Photographed by Howard H. Cleaves

furious rate elsewhere; it may even be freezing cold about the polar seas, and at the same time summer-warm near the Gulf of Mexico.

All of these states, or conditions, of the air, taken at the same time but in different places and at different heights (altitudes), are what is called the weather, and it is very important to understand all we can about the weather, since we are obliged to live on this earth in weather which constantly changes.

The air in motion is called *wind*. When the wind blows hard, we really hear that part of the weather. The air full of water-vapor falls upon us in rain or snow, according as it is warm or cold. When it rains or snows, we can

see that part of the weather. The air full of heat or cold we feel, and we call it hot or cold weather, as the season may be.

When the air is full of dust-particles or smoke, then we smell not the air, but the foul matter in it.

It is when the air is full of pure, health-giving gases and vapors, sometimes moist, sometimes dry, but always fresh and invigorating, that we actually smell the weather—the very best kind of weather in all the world.

Not only man but all other animals, as well as the trees and plants, are so made that changes in the weather have much to do with their growth and habits.

Plants and animals in hot, rainless regions are quite unlike plants and animals which live where it is always moist or cold. Even the same kind of plants and animals become changed somewhat in habits and growth, when put into very different kinds of weather for a long time (climate).

Most plants and animals, especially those living in cold climates, change also in habit, and more or less in growth, with the seasons of the year.

It is for this reason that a study of the changes in weather which take place during the four seasons of the year helps us to understand and look for the growth of vegetation in spring, the coming of migrating birds and the awakening of animals which sleep during winter (hibernation).

In order to know when spring may be expected, we must watch the weather from day to day. We must not only watch it, but must learn to measure it, to weigh it and to make pictures of it.

Although it sounds strange to speak of measuring, weighing and making pictures of the weather, this is really what is done in weather-bureaus all over the world.

The air is measured in different ways, for example, by its hotness or coldness (temperature); by the rate at which it travels when in motion (velocity); or by the amount of moisture in it (humidity).

It is weighed by finding out how much it presses down upon the earth.

A thermometer, or heat-measure, is an instrument which tells just how hot or cold the air is. A barometer, or weight-measure, is an instrument which tells the weight (pressure) of the air.

A weather-vane is a very simple instrument, telling in which direction the air is moving, while an anemometer, or wind-measure, tells how fast the air moves.

Other instruments are made to show how wet or how dry the air is, how much rain or snow it sheds upon the earth, and other things important for man to know.

In order to make pictures of the weather, it is necessary first to weigh and measure it in different places, and at different heights. An isotherm is a picture of the temperature, while an isobar is a picture of the pressure of the air, or atmosphere.



SPEED OF THE ROBIN MIGRATION

(Reproduced by permission of the Biological Survey from W. W. Cooke's 'Some New Facts About the Migration of Birds,' Year book, Department of Agriculture, 1903, pp. 371-386.)

The black band indicates the average position of the isotherm of 35° F. at the several dates mentioned. The dotted band shows the approximate route of the Robins of northwestern Alaska. The dates in this band represent the average time of arrival of the earliest Robins. The numbers at the side of the migration route indicate in miles per day the average speed of migration between the dated places.

These pictures are simply imaginary lines drawn on a map of the world, from place to place, wherever the heat (temperature) of the air or its weight (pressure) are the same.

They may be called lines of equal temperature and lines of equal pressure, but the words isotherms and isobars are shorter, and just as easy to remember when once we know what they mean.

Now, since the weather is constantly changing, the pictures of it are different from day to day; but it is possible, by studying the pictures which have been made of the weather every day for a year, or ten years or twenty-five years, to make a picture which shows what the weather usually is like on any particular day. The chart given below shows what the weather usually looks like when it is heated up to 35° F., and where such weather may be found on the fifteenth of each month from January to June.

The isotherm of 35° F. is often called the isotherm of spring, for when the thermometer stands at 35° F. we know it is time to look for spring.

Plants and animals do not need thermometers and barometers and weather-vanes to tell them when spring is coming. They are themselves so sensitive to changes in the weather that many of them, at least, might be called "living thermometers."

It is much easier to learn the plants and animals when we know their habits with respect to the weather. Birds, for example, have quite different habits at different seasons of the year. Some birds live all the year round in the cold North, others in the hot South, others in places where it is only moderately cold and warm. Many birds, however, have a wonderful habit of traveling thousands of miles each spring and fall, in order to nest in the North and to spend the winter in the South. This habit is called *migration*. We do not know just how much the weather has to do with it, but we do know that when the spring isotherm reaches us, migrating birds begin to come too, just as surely as the snow melts or the grass grows.

During February and March, you will see birds which have come down from British America or the northernmost part of the United States to spend the winter in your vicinity (winter residents); birds which live all the year round with you (permanent residents); a few birds, perhaps, like the Pine Grosbeak or Snowy Owl, which come South from the cold North only occasionally or for a short time (winter visitors); and the earliest of the birds which make long-distance journeys every year (spring and fall migrants). Learn one of each of these groups of birds, if possible, and watch their movements closely when the isotherm of 35° F. reaches you. As it grows warmer than 35° F., find out where the different birds go.

There is so much that is worth knowing about the weather and its effect upon all things, living or dead, that there is really no place to stop when once we have started to study it.

Perhaps the most interesting fact about the weather is that there is so much that has never yet been found out about it.

SUGGESTIONS

THE WEATHER.

- a.* Use a thermometer, barometer and weather-vane.
- b.* Keep a large chart hung up in the school-room, for records of temperature, barometric readings and the direction of the wind. A large sheet of manila paper will answer, divided into squares corresponding to the number of days in the month. Enter the daily records in one square, using colored pencils to distinguish the three records taken.
- c.* Divide the pupils into squads, whose duty it shall be to make weather observations and to fill in the records day by day.

THE ISOTHERM OF SPRING.

- a.* Correlate observations on the weather with a simple study of the advance of spring, following the isotherm of 35° F. from the Gulf States to Alaska, using the accompanying map.
- b.* Hang up a plain manila chart, on which is sketched the outline of North America with the divisions of the United States and British America, using a colored pencil to trace the courses of the principal mountain ranges and largest rivers. On the following dates, Jan. 15, Feb. 15, Mar. 15, Apl. 15, May 15 and June 15, draw in the isotherm of 35° F. according to its average position at those times, letting the pupils see how different in latitude, places of equal temperature are likely to be.
- c.* Keep a large colored map of North America on the wall beside the isothermal chart and the weather-record. As the pupils learn different geographical places, let them observe whether spring is likely to reach these places early or late, as compared with the locality of their home-town or city.
- d.* Procure a weather-map* from the U. S. Weather Bureau, Washington, D. C., and compare the pictures of the weather made by isobars with those made by isotherms. Without attempting to explain in detail isobaric lines, point out the most conspicuous areas of high and low pressure, stating that, by a careful study of isobars and isotherms, it is possible to predict what the weather is likely to be.

NATURE.

- a.* Find out what plants and trees will blossom when the temperature is 35° F., and also what insects and animals will be active at this time.
- b.* Follow the northward migration of the Robin as given on the accompanying map. Between what dates does it travel the fastest, and why?
- c.* Keep a record of the earliest arrivals of migrating birds, the length of their stay in your neighborhood, the birds which come in flocks and those which come singly or in pairs.

GENERAL.

Ask the pupils to design and make weather-vanes. Explain in the simplest way the principles of the thermometer and barometer.

Try to discover where winter remains the longest and where spring comes the earliest; why Alaska is warmer than Greenland; whether large bodies of water, such as the Great Lakes, tend to hinder or to hasten the advance of spring; why isotherms do not run *straight*, across the great mountain-ranges; why spring comes earlier on the south side of hills and valleys than on the north; why one side of a tree will sometimes be covered with snow while the other is dripping wet; where the earliest and latest violets (or any other common wild-flowers) bloom in your neighborhood; why trees and shrubs sometimes bud ahead of the season; whether any migrating birds come north while the rivers and ponds are still frozen.

Begin to make outdoor observations in February, and keep watch of the way nature makes ready to welcome the coming of spring.

REFERENCES.

Hand-book of Nature-Study, Mrs. Anna Botsford Comstock.

Some New Facts about the Migration of Birds, Wells W. Cooke. (See Yearbook of the U. S. Dept. of Agriculture, 1903.)

FROM YOUNG OBSERVERS

The Nest of a Crippled Towhee

When walking along a pond, one warm summer day, we turned and took a little path into a woods, mostly made up of locust trees and much poison ivy. I looked up into a locust tree and saw a bulky nest. We were puzzled about it, for it did not look like any nest we had ever seen before in such a place.

We sat down, therefore, and watched the nest. We did not have to wait long, for a male Towhee was seen in the tree. He anxiously chipped. Suddenly a female Towhee came to a near-by bush. At last the male Towhee got up courage and, flying to the nest, fed some very young birds. After feeding his young, which were in a crotch of the locust, surrounded by poison ivy, he flew away. The female bird then got up her courage and fed the young. When the male bird returned, we noticed a singular thing. *He had only one leg!*

One day when we came to the nest, we found it vacant.

Then we collected the nest. It was made of the same material as other Towhee nests that we had found on the ground. We thought it quite peculiar to find a Towhee's nest ten feet up in a locust tree in the woods. We reached the conclusion that, because the bird had one leg, it had met with an accident, and probably had built in the tree for safety.—JANET DAVENPORT (aged 13). *Cold Spring Harbor, L. I.*

(This nest was on the edge of a thinly-wooded upland pasture, where the Towhee occurs quite commonly. The undersigned observed the female on the nest once, so completely hidden by poison ivy that only her tail and beak showed. Evidently this nest was considerably higher than the one reported in BIRD-LORE, Sept.-Oct., 1911,

p. 253. During the same and the following seasons (1910-11) in which the nest described above was discovered, two other nests of the Towhee were found in the immediate vicinity; the first, a typical ground nest in a pasture abounding in poison ivy; the other, also a ground-nest, an unusually compact, cup-like structure, set firmly into the edge of a rough lawn, without other protection than the shade of some large spruces. Will our young observers take pains to find out whether variation in the nesting-site is more common than variation in nesting-material, or in the size and shape of the nest itself? Try the Robin as a good bird to study in working out this problem.—A. H. W.)

The Bravery of the Nonpareil

Having just come from Minnesota, a state fairly alive with birds, I was very much surprised at the comparative absence of them in Texas.

For four days I saw no other bird than an English Sparrow, on the fifth I saw a Turkey Vulture, and, from then on to the tenth saw none other than these. But on the tenth I certainly had a surprise.

I was in the back yard, doing an odd job, when from a small hackberry tree in the front, the only tree, came a most delightful, cheery little ditty. I excitedly ran toward it, and after looking for some time (the song had ceased), discovered a Nonpareil on the topmost spray of the other side. He continued his pipings, after a brief interval, and, after the family had had a thorough survey of him, flew away to continue his song in a distant sycamore.

I then took careful notes on the Nonpareils, finding that, even though so brightly colored, they are extremely hard to discern among the green foliage.

Three days afterward, I was in a neighbor's mulberry tree, watching a female devour the ripe fruit, but no male was seen, when all at once a great flock of English Sparrows commenced picking at the little female frightfully, till I began to wonder what would happen to her. While in this mood of inquiry, there was a brilliant flash of red fire (no wonder they are called Red-birds), and the whole company of English Sparrows was scattered all to naught.

The male and female then leisurely ate the mulberries from the lower branches, finely displaying their brilliant colors.—GEORGE M. SUTTON (aged 13.) *Fort Worth, Texas.*

(For a colored illustration of the species described in this interesting letter, see the Sept.-Oct. issue of BIRD-LORE, 1911, under Painted Bunting. One of the most surprising things about birds of highly colored plumage is their inconspicuousness when seen from certain angles and at certain heights. Will this young observer tell us how many different species of birds he has found feeding upon the mulberry-tree?—A. H. W.)



THE WHITE EGRETS

By T. GILBERT PEARSON, Secretary

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 54

The most beautiful, and one of the most popular millinery decorations with civilized women, is that dainty and exquisitely formed feather known as the "aigrette" in America, and the "osprey" in Europe.

It is a sad fact that this personal decoration, so much esteemed by our modishly dressed women, is procurable only by inflicting unspeakable agonies on some of the most beautiful creatures which inhabit the earth.

In the early days of the Audubon movement, its leaders raised their hands in protest against the traffic in these feathers. Their cry has been taken up by many other organizations and societies interested in various phases of humane work. Today it seems incredible that there should be any well-read person in the United States who is not aware of the fact that the "aigrette" is the nuptial plume worn by the white Egret at the nesting-time of the year, to procure which it is necessary to shoot the birds, which means that the young, in turn, are left to slowly die of starvation.

In fighting the traffic in these feathers, the Audubon Societies have published and distributed millions of pages of literature bearing on the subject; have contributed thousands of columns of matter to the public press, and their speakers have addressed audiences aggregating hundreds of thousands of hearers, in all of which there have been set forth the unanswerable facts relative to the methods of procuring the material for this heartless trade.

In their efforts to safeguard the interests of these birds, agents have been sent to those regions still inhabited by the white Egrets, and their nesting-colonies located. Wardens have been employed to remain in the fever-infested swamps to guard the localities which the birds had chosen for their rookeries. Frequently, these men have had to contend with unscrupulous feather-gatherers. Three Audubon wardens have been killed, and at least two others probably saved their lives only by promptly returning the rifle fire of their would-be assassins.

Yet, despite all our efforts, the birds have continually become scarcer, and, in fact, so depleted are their numbers today that we did not know of over fifteen colonies in the United States in the summer of 1911.

In these ancestral nesting-places still gather a few thousand birds, the pitiful remnant of the great flocks which inhabited our southern states a few decades ago. These, this Association is exerting every possible effort to protect.

In the summer of 1906, the writer spent five weeks on the Gulf Coast of Florida, covering the territory between Tampa and Key West. About twenty-



SNOWY EGRET

Order—HERONIÆ
Genus—EGRETTA

Family—ARDEIDÆ
Species—CANDIDISSIMA

five colonies of water-birds were examined, and innumerable feeding-grounds of Herons were visited. In all this stretch of territory—two hundred miles in length—less than a dozen white Egrets were found; whereas, in the same region eleven years before, the writer had found the birds plentiful, and in places very abundant.

There are two species of plume-bearing white Egrets in America. The large one (*Herodias egretta*) is a beautiful long-legged, long-necked bird, standing between three and four feet in height, and the Snowy Heron (*Egretta can-*



SNOWY EGRET

Photographed by P. B. Philipp

didissima), of much shorter stature. From the back of the former are obtained the long, straight plumes, and from the latter are taken the short, curved ones, known to the trade as the "cross aigrette." Both species are normally found in the same territory and under very similar conditions. They formerly bred from Oregon and New York on the north, south through Mexico and the northern Central America to Patagonia and Chile. Their range, however, in the United States has been greatly restricted. One small colony is reported to be still in existence in eastern Oregon, and it is just possible that there are one or more groups of birds in southern California. The most northern nest-

ing-place on the Atlantic Coast is in North Carolina, down close to the southern boundary line. Large areas in Florida, where, in years gone by, the birds were more abundant than in any other place in the United States, are now devoid of either species, except now and then a rare straggler. After the nesting season, a few Egrets wander northward. Thus, in the summer of 1911, several were seen in Massachusetts, some of them being photographed by Dr. Geo. W. Field, of Boston. If the colonies along the south Atlantic Coast can be guarded and the traffic in plumes suppressed, there seems every reason to believe that the birds will again extend their natural breeding-range northward, until they once more inhabit suitable regions in the neighborhood of New York.

Egrets feed chiefly in the rice-fields, and about the marshy borders of ponds, lakes and streams. When the period of nidification arrives, they usually retire to the depths of more or less inaccessible swamps, and there, in company with other Herons, assemble to build their nests on the horizontal limbs of the cypress or willow trees.

The eggs range from three to five in number. These are blue in color, and are laid on a frail platform of sticks and twigs which the birds gather in the neighborhood. For food, frogs, snakes, fish, and other aquatic forms of life, are ready at hand.

Egrets are not regarded as of very great economic value as destroyers of obnoxious insects. This, however, is no reason why they do not deserve our protection. The pure, glossy whiteness of their plumage and the elegance of their form and movement are sufficient reasons for preserving these living objects of statuary of the southern marshes, even as civilized man preserves in the home and in the forum the marble statues, carved by the hands of inspired artists.

The Audubon workers, by constant agitation and an immense amount of labor, have succeeded in securing the passage of laws which prohibit the sale of these birds in the states of New York, New Jersey, Louisiana, Ohio, Missouri, Massachusetts, Oregon, and California. This is only a beginning in the line of legislation for suppressing the traffic in their feathers, for the sale still goes on in every city of any size in the other states of the Union.

Even where the trade in aigrettes is now declared to be illegal, there are frequent evidences of violation of the law; for so valuable and so alluring are the profits, that many annually run the risk of prosecution in order to deal in the feathers. The price of aigrettes has gone up and up, until today prime feathers are actually worth more than twice their weight in gold.

As the birds have become exterminated in the United States, the millinery feather agents have turned their attention to the *tierra caliente* of Mexico, and the rivers of South America. Here, in the swamps of the hot countries, the feather-gatherers are to be found every year. It is such a profitable industry that the fortunate hunter who gets possession of one of the big colonies, or *garzeros*, usually guards it with jealous care, and his gun is turned against all



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comers. It is customary to wait until the eggs are hatched, for then the old birds, responding to the cries of their young, are loathe to leave the neighborhood, and readily fall a prey to the gunners. The millinery dealers, in their efforts to defend this nefarious traffic, seek to mislead the public by the statements to the effect that aigrettes are gathered from the ground underneath the nests. Every ornithologist, or other person, who has had experience with Heron rookeries, knows the falsity of this statement. At least twenty well-known naturalists have filed affidavits to this effect with the officers of the National Association of Audubon Societies.

The following are abstracts from some of the sworn statements furnished by men, many of whose names are well known to the reading public. Read these and tell your friends of the atrocities of the aigrette traffic.

(From Affidavit of Prof. P. M. Rea, Charleston, S. C.)

"After practical observation of the breeding of Snowy Herons and American Egrets on the coast islands and swamps of South Carolina, and on the basis of experience with the work of plume-hunters, as well as from my knowledge of the growth of the plumage in these birds, I desire to state most emphatically that the plumes which are used for millinery purposes are worn by the birds only during the breeding season, and when cast naturally are of practically no commercial value."

(From Affidavit of Arthur T. Wayne, Mount Pleasant, S. C.)

"It is utterly impossible to get fifty egret plumes from any colony of breeding birds without shooting the birds. Last spring, I went twice a week to a breeding colony of American and Snowy Egrets, from early in April until June 8. Despite the fact that I covered miles of territory in a boat, I picked up but two American Egret plumes (which I now have); but not a single Snowy Egret plume did I see, nor did my companion, who accompanied me on every trip.

"I saw an American Egret plume on the water, and left it, purposely, to see whether it would sink or not. Upon visiting the place a few days afterwards, the plume was not in evidence, undoubtedly having sunk. The plumes are chiefly shed in the air while the birds are going to or coming from their breeding-grounds.

"If that millinery plume law is repealed, the fate of the American and Snowy Egrets is sealed, for the few birds that remain will be shot to the very last one."

(From Affidavit of T. J. Ashe, Key West, Fla.)

"I have seen many molted and dropped feathers from wild plumed birds. I have never seen a molted or dropped feather that was fit for anything.

"It is the exception when a plumed bird drops feathers of any value while

in flight. What feathers are so dropped are those that are frayed, worn out, and forced out by the process of molting.

"The molting season is not during the hatching season, but is after the hatching season.

"The shedding, or molting, takes place once a year; and during this molting-season the feathers, after having the hard usage of the year from wind, rain and other causes, when dropped are of absolutely no commercial value."

(From letter of Julian A. Dimock, Peekamose, New York.)

"I know a goodly number of the plume-hunters of Florida. I have camped with them and talked to them. I have heard their tales of adventure and even full accounts of the 'shooting-up' of an Egret rookery. Never has a man in Florida suggested to me that plumes could be obtained without killing the birds.

"I have known the wardens, and have visited rookeries after they had been 'shot-up,' and the evidence all pointed to the everlasting use of the gun.

"It is certainly not true that the plumes can be obtained without killing the birds bearing them.

"Nineteen years ago, I visited the Cuthbert Rookery with one of the men who discovered the birds nesting in that Lake. He and his partner had sold the plumes gathered then for more than a thousand dollars. He showed me how they hid in the bushes and shot the birds. He even gave me a chance to watch him kill two or three birds.

"I know personally the man chiefly responsible for the slaughter of the birds at Alligator Bay. He laughed at the idea of getting plumes without killing the birds. I well know the man who shot the birds up Rogers River, and even saw some of the empty shells left on the ground by him.

"I have camped with Seminoles, whites, blacks, outlaws, and those within the pale, connected with plume-hunting, and all tell the same story: *The birds are shot to get the plumes.*

"The evidence of my own eyes, and the action of the birds themselves, convinces me that there is not a shadow of doubt concerning this point."

(From Affidavit of George N. Chamberlin, Daytona, Fla.)

"George N. Chamberlin, being duly sworn, deposes and says that he has been a resident of Daytona, Florida, for nearly twenty-four years and is familiar with the life and habits of the Egret, or Snowy Heron, large numbers of which formerly nested in rookeries adjacent to the Halifax and Indian River country, between St. Augustine and Miami. Large colonies of birds once inhabiting these rookeries, have been almost entirely exterminated by plume-hunters who, after shooting them, remove the plumes by a knife cut, known as scalping, after which the bodies are left to rot or decay.

"It is during the nesting-season that the bird's natural fear of man disappears under stress of providing for and protecting its young. It is then that

the plumes are in most perfect condition. The parent birds, at such time, are easily killed, and, as a result, the young birds perish, thus making the annual gathering of plumes one of the most destructive of all agencies operating against bird-life. This beautiful bird is now nearing extinction in Florida, there being but a remnant of former colonies remaining in swampy recesses in extreme southern Florida.



AMERICAN EGRET
Photographed by P. B. Philipp

"The statement that Egrets or Snowy Herons are not killed for their plumage, or that the plumes are picked up about the rookeries or nesting-places, is a perversion of facts, and one that is absolutely false."

(From Affidavit of O. E. Baynard, Gainesville, Florida.)

"That he is acquainted with the customs and habits of what are known as the Florida plumage birds; that he has been on the grounds and places of roosting of the different plumage birds of Florida, and that he makes this affidavit from the facts ascertained by himself in the personal investigation and observation of the habits of the different plumage birds of Florida. Affiant further swears that it is impossible to obtain such plumes of either the Snowy Heron or American Egret, found principally in Florida, which will be of any

commercial value, without killing the birds; and that the plumes shed by these birds around the nest or roosting-places are of no commercial value.

"Affiant further swears that these birds are of a very wild nature, and that it is only during the nesting-season and while the young birds are in the nest that there are any plumes on the birds of any commercial value, and that the killing of the birds, in order to obtain the plumes, will necessarily cause the death of a large number of young birds."

(From letter of Casper Whitney.)

"During extended travel throughout South America, from 1903 to 1907 inclusive, I journeyed, on three separate occasions, by canoe (1904-1907) on the Lower Orinoco and Apure rivers and their tributaries. This is the region, so far as Venezuela is concerned, in which is the greatest slaughter of White Herons for their plumage, or, more specifically, for the marital plumes, which are carried only in the mating and breeding season, and are known in the millinery trade as aigrettes.

"There is literally no room for question. The Snowy Herons are killed exactly as I describe. It is the custom of all those who hunt for the millinery trade, and is recognized by the natives as the usual method."

The following astounding confession of a plume-hunter has been furnished us in the form of an affidavit by Mr. A. H. Meyer, who, for nine years was engaged in the business of killing Egrets in South America for the New York and European milliners:

"My attention has been called to the fact that certain commercial interests in this city are circulating stories in the newspapers and elsewhere to the effect that the aigrettes used in the millinery trade come chiefly from Venezuela, where they are gathered from the ground in the large *garceros*, or breeding-colonies, of White Herons.

I wish to state that I have personally engaged in the work of collecting the plumes of these birds in Venezuela. This was my business for the years 1896 to 1905, inclusive. I am thoroughly conversant with the methods employed in gathering Egret and Snowy Heron plumes in Venezuela, and I wish to give the following statement regarding the practices employed in procuring these feathers:

The birds gather in large colonies to rear their young. They have the plumes only during the mating and nesting season. After the period when they are employed in caring for their young, it is found that the plumes are virtually of no commercial value, because of the worn and frayed condition to which they have been reduced. It is the custom in Venezuela to shoot the birds while the young are in the nests. A few feathers of the large White Heron (American Egret), known as the *Garza blanca*, can be picked up of a morning about their breeding places, but these are of small value and are

known as "dead feathers." They are worth locally not over \$3.00 an ounce. While the feathers taken from the bird, known as "live feathers," are worth \$15.00 an ounce.

My work led me into every part of Venezuela and Colombia where these birds are to be found, and I have never yet found or heard tell of any *garceros* that were guarded for the purpose of simply gathering the feathers from the ground. No such a condition exists in Venezuela. The story is absolutely without foundation, in my opinion, and has simply been put forward for commercial purposes. The natives of the country, who do virtually all of the hunting for feathers, are not provident in their nature, and their practices are of a most cruel and brutal nature. I have seen them frequently pull the plumes from wounded birds, leaving the crippled birds to die of starvation, unable to respond to the cries of their young in the nests above, which were calling for food. I have known these people to tie and prop up wounded Egrets on the marsh where they would attract the attention of other birds flying by. These decoys they keep in this position until they die of their wounds or from the attacks of insects. I have seen the terrible red ants of that country actually eating out the eyes of these wounded, helpless birds that were tied up by the plume-hunters. I could write you many pages of the horrors practiced in gathering aigrette feathers in Venezuela by the natives for the millinery trade of Paris and New York.

"To illustrate the comparatively small number of dead feathers which are collected, I will mention that in one year I and my associates shipped to New York eighty pounds of the plumes of the large Heron and twelve pounds of the little recurved plumes of the Snowy Heron. In this whole lot there were not over five pounds of plumes that had been gathered from the ground—and these were of little value. The plume-birds have been nearly exterminated in the United States and Mexico, and the same condition of affairs will soon exist in tropical America. This extermination will come about because of the fact that the young are left to starve in the nest when the old birds are killed, any other statement made by interested parties to the contrary notwithstanding.

"I am so incensed at the ridiculously absurd and misleading stories that are being published on this question that I want to give you this letter, and, before delivering it to you, shall take oath to its truthfulness."



The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions to the National Association of Audubon Societies, 1974 Broadway, New York City

President Dutcher

While we are unable to detect any very marked improvement in the physical condition of President William Dutcher, it is much comfort to know that he is surely growing stronger. It is, at this time, his custom to be dressed and to sit up a portion of each day. Many of his friends have written him from time to time, and he is now able to read and enjoy such communications. Any one who may desire to write him may have their letters reach him directly by addressing them to No. 990 Central Avenue, Plainfield, N. J.—T. GILBERT PEARSON.

A Gift of Five Thousand Dollars

The Association has recently received a contribution of \$5,000. to be used during the year 1912 in pushing the educational feature of our work among the children of the country.

The very encouraging results which have been achieved along these lines in the southern states for the past two years, as a result of contributions of Mrs. Russell Sage, have lead a friend of the birds to make it possible for the Association to work in a similar way in other sections of the United States.

In a letter which accompanied the contribution, we learn that the donor "is deeply interested in the work of wild-life protection, and believes that the National Association of Audubon Societies is doing more good work for this cause than any other organization."

We regret not being able to publish the name of this public-spirited member, who, through modesty, has absolutely refused to give us this pleasure. Full details regarding the proposed expenditure of

this fund have not been completed as we go to press. We expect to have good reports to make, from time to time, of this new extension in our educational endeavor.—T. G. P.

Night Heron Colonies

The Association has recently undertaken to obtain information regarding the breeding of the Black-crowned Night Heron within 200 miles of New York City. To date, the following facts have developed:

A colony of these birds has existed for many years near Roslyn, Long Island. Mr. Frank M. Chapman visited the place in 1899, and at that time estimated the number of nests at 525. In 1907, Mr. Francis Harper thought there were from 250 to 300 pairs. Mr. P. B. Philipp visited the place the following year, and reported only 200 nests. In 1910, the colony had shrunk to about twenty-five birds. The swamp in which the birds nested has been reduced in size since that time, by the dying of trees (thus making them unavailable as nesting-sites for the Herons), by the cutting of timber, and by the construction of a road. The swamp has now virtually been converted into a private park.

Mr. Clinton G. Abbott reports a colony at Bordentown, New Jersey, which he visited yearly from 1899 to 1907. In its most populous condition, he states that there were 150 or more nests. The farmer on whose land this colony was situated was well disposed towards the birds and, while obliged to cut some wood, took only trees from the border of the swamp and, as far as possible, avoided disturbing the birds. He also threatened to shoot any one whom he found attempt-



VIEW IN ROOKERY OF BLACK-CROWNED NIGHT HERONS AT ROSLYN, LONG ISLAND
Photographed by P. B. Philipp

ing to molest them. Mr. Abbott also reports a colony in the vicinity of Montauk Point, Long Island, which may have contained fifty nests. The character of the nesting-place was such that even an approximately accurate estimate was rendered very difficult. Mr. Francis Harper reports small colonies of five or six birds each, scattered at intervals along the south shore of Long Island; that a group of nesting birds has been reported to him from Walkill, Ulster County, New York, and still another at Honeoye Lake, near Rochester, New York.

Mr. P. B. Philipp reports that in 1910 there was a large colony located in a maple swamp near Great Neck, Long Island, and not five miles from the Roslyn colony. He does not attempt to

estimate the number of birds. He also reports a colony back of Greenwich, Connecticut, of which, however, he has no particulars.

Mr. Henry W. Shoemaker has recently written the Association concerning a nesting colony of Night Herons in a grove of large trees at Greenwich Cove, near Sound Beach, Connecticut. He states that this year there were over 100 nests, and that the birds need a guard to protect them, as the summer residents cannot be restrained from occasionally taking shots at them. Formerly, Great Blue Herons and Bitterns existed here, but this year a solitary Great Blue Heron appeared, and no Bitterns. The Association intends to make an effort to give adequate protection to this colony.



NEST AND EGGS OF BLACK-CROWNED NIGHT HERON IN ROOKERY AT
ROSLYN, LONG ISLAND
Photographed by P. B. Philipp

On July 30, last, the writer visited a colony on Fisher's Island, New York, which was estimated to contain in the neighborhood of 100 pairs of these birds. It is situated on the property of one of our members, Mr. Alfred L. Ferguson, who extends to it every protection. A colony is also reported from Gardiner's Island, New York.

It is desirable that further information should be had concerning the history and present status of the colonies enumerated, and also regarding the location of any additional groups of nesting birds. Readers of BIRD-LORE are, therefore, requested to coöperate in this work of gathering further data.—T. G. P.

Bird Protection in Porto Rico

About the year 1877, that vigorous little animal, the mongoose, was introduced on the island of Porto Rico, for the purpose, so it is said, of destroying the rats which were playing havoc with the sugar-cane.

"Rikki-Tikki-Tavi" found the climate congenial and food abundant. His numbers rapidly increased, and the rats correspondingly grew fewer. When in time, however, hunting in the cane-fields became unprofitable, the mongoose turned his attention to birds, with the result that before long the ground-breeding species were greatly reduced in numbers.

Porto Rico is fairly thickly settled, and, there having been practically no legal restriction to bird-shooting, the shot-gun has long aided the little mammal in its work of destruction. Especially is this true since American occupation began, in 1898. Of late, various reports of the wanton killing of birds in the island by soldiers and sailors have reached our office.

This unfortunate state of affair has recently received a sudden check, which, in the end, is likely to prove of material service in conserving the bird life. The Sixth Legislative Assembly of Porto Rico enacted a bird-protection law of which the following is an extract: "Whoever

seizes, kills, destroys or keeps in his possession any bird beneficial to agriculture shall be guilty of a misdemeanor, and punished therefor with a fine of not less than \$5 or more than \$25, or with imprisonment of not more than ten days, or with both penalties."

The Assembly went farther, and empowered the Board of Commissioners of Agriculture to determine what birds are beneficial to agriculture. At a regular meeting of the Board, held July 14, 1911, an order was passed which names sixty-nine species as being beneficial, and therefore coming within the scope of the law.

Desiring to make doubly certain that no useful birds should be omitted, a second order was passed, which reads: "That all other birds now found in Porto Rico be declared beneficial to agriculture, with the following exceptions, the family of *Falconidæ*, migratory Ducks, and Snipes (*Gallinago wilsoni*)."

The National Association of Audubon Societies has, for some time, been in close correspondence with the Board of Agriculture, and it may be mentioned that there is now under advisement a plan for further protecting the birds of the island by placing limitations upon the sale of their bodies or feathers.

From the published lists of Bowditch and others, we learn that 160 species of birds have thus far been recorded from Porto Rico.—T. G. P.

Fatalities in Hunting

The short open season for hunting big game closed in most states in December. This year, as usual, there have been a large number of people killed, as the result of the careless handling of firearms. Hundreds of inexperienced men and boys annually go into the woods with the most deadly weapons which the human hand has been able to construct. Many of these hunters, when once they get out of town with a gun in their hands, immediately fall prey to their imaginations, and fancy that every thicket is inhabited by some wild animal which it is desirable to

bring to bag. It is astonishing how many people are shot simply because irresponsible hunters have seen a movement in the bushes, and, without waiting to ascertain what caused the disturbance of the leaves, at once begin a fusillade, as if endeavoring to sink a battle-ship. This random shooting, indulged in by men incompetent to handle a rifle, but who fondly expect to thus slay a noble buck, is, perhaps, the chief cause for this annual human slaughter.

It is reported that the past season witnessed the death by hunting accidents of 101 people in twenty-three states. These all occurred within a period of sixty days. During the same time, thirty-seven others were injured. Incidentally, the slaughter of cattle and other domestic animals. from the same cause, was considerable.

Michigan is said to lead the list of fatalities with 16 killed; 14 lost their lives in Illinois, 13 in Wisconsin, 11 in Maine, and 9 in New York state. This terrific loss of life is surely an unnecessary price to pay for the love of the chase; and legislation looking to the preservation of human life is evidently as much needed among our game laws as legislation for the protection of deer. Laws in some states, intended to safe guard the hunters, have already been considered, and various suggestions have been made in regard to bettering conditions. "Wear red shirts," someone has said. "Do not shoot until you have seen the deer's horns," a second advocates; while still another thinks it might be well to stay at home, and let some one else run the risk of being shot.

The hunting season for the past year has been about an average one in reference to the number of game animals killed. Maine, of course, furnishes one of the best-known hunting-fields in the country, and it may be interesting in this connection to record that about 300 moose are supposed to have been taken there the past season. Despatches from Bangor state that the carcasses of 2,700 deer have passed through that town, and the total number killed in the state for the season is estimated at about 11,000.—T. G. P.

Funds Needed to Save the Egrets

Mr. John Dryden Kuser, of Newark, New Jersey, one of our enthusiastic members, has sent in a contribution for the 1912 Egret Protection work, together with the following letter, which he states that he would be glad to have brought to the attention of the readers of BIRD-LORE:

"Last season (1911), \$1,431 was raised for the protection of Herons and Egrets. More money is needed for the coming year, and will not some of the readers of BIRD-LORE furnish it? I am starting by giving \$25, to which my father, Colonel Anthony R. Kuser, has added \$10 and my mother, \$5, making a total of \$40. Can we not double, or at least exceed, the amount raised last year?

"If money can be secured by the National Association of Audubon Societies to pay wardens to protect the few remaining colonies of the beautiful American Egret, these birds may be saved from extinction; but if they are left unprotected what is to stop the plume-hunters from slaughtering the entire colony. Next year may be too late; so, to help save the Egret, bird-lovers must contribute to the Egret Fund. Money will be received by Mr. Jonathan Dwight, Jr., Treasurer of the National Association of Audubon Societies, 1974 Broadway, New York City."

A statement of results accomplished in the work of protecting these rare and beautiful birds during the past year will shortly be mailed to all of the contributors to this work during the year of 1911. In order that agents may be placed in the field early in the spring, to resume the arduous and difficult undertaking of locating other colonies of Egrets in the southern swamps, and in order that we may have sufficient time to secure new guards and renew contracts with wardens employed last year, those persons interested in this phase of bird protection are urged to seriously consider the advisability of making special contributions to the work of saving the Egrets, and to advise us as early as possible regarding the extent of their financial aid.—T. G. P.

New Members

Between November 1, 1911, and January 1, 1912, the following new Life Members of the National Association of Audubon Societies were enrolled:

Bliss, Miss Catherine A.
Bowdoin, Miss Edith G.
Bowdoin, Mrs. Temple
Cudworth, Mrs. Frederic B.
French, Miss Caroline L. W.
Kuser, Mr. John Dryden
Rogers, Mr. Charles H.
Wadsworth, Mr. Clarence S.

During the same period applications for Sustaining Membership together with the first annual fees, were received as follows:

Acton, Miss Agnes A.
Adams, Edward B.
Angier, Albert E.
Bailey, Henry T.
Baker, Miss Mary K.
Barlow, Mrs. F. C.
Bennett, Miss Marion
Bond, Mr. Henry
Bowdoin, Mrs. George S.
Bowen, Miss Jane
Bowles, R. P.
Frasher, R. I.
Brewer, Edward M.
Brock, Mrs. R. C. H.
Brooks, Miss M. W.
Burroughs, George
Carter, Richard B.
Chadwick, Mr. E. J.
Codman, Miss M. C.
Cope, Mrs. Walter
Cornwall, Mr. Eldridge L.
Cotton, Miss Elizabeth A.
Crawford, Mr. George E.
Crosby, Mrs. Ernest
Dana, Miss M. T.
Dearborn, Miss Sarah
Dibble, Mrs. R. Wells
Draper, Mrs. Henry
Ellsworth, Mr. J. M.
Emerson, Mrs. Edward
Ernst, Mrs. H. C.
Ewart, Mr. William I.
Farnsworth, Mr. F. B.
Field, Mr. Charles H.
Fitzpatrick, Mr. Thos. B.
Frothingham, Mrs. Eugenia
Gay, Mrs. F. L.
Gilbert, Mr. Edward H.
Goodwin, Miss Amelia
Hastings, Miss Alice
Helm, Mr. Louis
Hoguet, Mr. Henri A. L.
Hoover, Mr. M. H.
Hopkins, Mr. H. Lindsay
Horsfall, Mr. Robert B.
Hubbard, Mrs. James M.
Hull, Miss Beatrice, Sec'y.
Hull, Mrs. G. W.

Jackson, Mr. Ernest
Jackson, Mr. Francis de M.
James, Mr. Henry
Johnson, Mr. Lewis J.
Johnson, Miss Mary W.
Jones, Mrs. George E.
Jordan, Mrs. Donald
Justice, Mr. Henry
Kimball, Mr. Benjamin
King, Mr. Henry B.
Lee, Mr. Joseph
Lee, Mr. J. S.
Lee, Mrs. J. S.
Leeds, Mrs. John G.
Lovell, Mrs. F. H., Jr.
Moos, Mrs. J. B.
Mori-on, Mr. George B.
Morris, Mrs. J. B.
Morse, Mr. Henry Lee
Moschowitz, Mrs. A. V.
MacRae, Dr. Thomas
Norbeck, Miss Nellie
Osborn, Mrs. Henry Fairfield
Pack, Mrs. Charles L.
Parsons, Miss Katharine
Platt, Miss Marie E.
Peters, Mr. William R.
Pomeroy, Mrs. Nelson
Putnam, Mr. J. B.
Putnam, Mrs. S. G.
Randolph, Miss Fanny F.
Rankine, Mrs. W. B.
Reynal, Mr. N. C.
Reynal, Master E. S.
Rhein, Mr. John, Jr.
Richardson, Mrs. Geo. F.
Ryan, Mr. John Barry
Robbins, Mr. N. E.
Rountree, Mrs. H. H.
Rusch, Mr. H. A.
Sanderson, Miss Marie
Scoville, Miss Grace
Sauter, Mr. J. V.
Scranton, Miss Mary E.
Sears, Miss Mary P.
Seeler, Mrs. Edgar V.
Sheffield, Mr. G. St. J.
Smith, Mr. W. Hinckle
Sibley, Mrs. Edward A.
Spear, Mrs. James
Speare, Mrs. Lewis R.
Spring, Mr. Edward
Sprunt, Mr. James
Tarbell, Mr. Arthur P.
Tappan, Miss Mary A.
Thomson, Mr. Ernest A.
Thorn, Mrs. I. B.
Tuckerman, Mrs. Leverett S.
Tuckerman, Lucius C.
Walter, Mrs. Alice Hall
Ward, Mr. Charles W.
Warren, Mr. Walter P.
Watt, Mrs. Henry C.
Welch, Mrs. Pierce N.
White, Mr. Charles E.

Whiton, Miss Mary B.
 Winston, Mr. G. Owen
 Winthrop, Mr. H. R.
 Wister, Mrs. Owen
 Yarrow, Miss Mary C.

The following new contributors were enrolled during the 60 days preceding January 1, 1912.

"A Bird Lover"
 Benson, Mrs. L. F.
 Brewster, Mrs. L. D.
 Cass, Miss Marion
 Chase, Mr. Frederick S.
 Cushing, Miss Margaret W.
 Dalney, Mr. Herbert
 Daws, Miss E. A.
 Dyer, Mrs. Ruth C.
 Freedley, Mrs. A. S.
 Hall, Mr. Edward H.
 Hill, Mrs. L. C.
 Lowell, Mrs. George G.
 Olcott, Mr. Mason
 Provost, Mrs. C. W.
 Paladin, Mr. Arthur
 Patterson, Miss Annie C.
 Ray, Miss Marie V.
 Roberts, Miss C. M.
 Wells, Mr. W. S.
 Wilcox, Miss Adelaide E.
 "X. X. X. X. Anonymous"

Artificial Aigrettes

Now that the sale of Heron aigrettes has become illegal in New York and several other states, the business of manufacturing imitations has again received impetus. In almost any shop-window in New York where millinery goods are displayed, one may see cleverly constructed "aigrettes," made from the feathers of domestic fowls. One familiar with the real article is not likely to be misled. There are many zealous bird lovers, however, who fail to distinguish the difference, and several of these, in their desire to aid the National Association in its efforts to see that the law is enforced, have written us anonymous letters, giving the street number of stores where they state aigrettes may be purchased.

We take the greatest pleasure in investigating all reports of this kind, but we earnestly request that our members and friends in future sign their names to all complaints. They may rest assured that their communications will be held in the

strictest confidence. By their doing this, we shall be given an opportunity to reply and let the complainants know why the supposed aigrettes in the shop-windows, which they viewed with so much displeasure, are not removed.

The writer recently had occasion to spend fifteen minutes in the New York Central depot, at Albany, New York. The waiting-room contained, at that time, sixty-six women. With note-book and pencil, he quietly made the round of the room and ascertained the following facts in reference to the women's hats.

One was decorated with the entire plumage of a Bonaparte's Gull; one had the feathers of a Goura Pigeon (whether real or artificial, it was difficult to determine); four were decorated with imitation aigrettes; twelve bore other creations made from the feathers of domestic fowls; fifteen had plumes of the ostrich; while thirty-three, or exactly one-half, held no feather decorations of any character.

This may, or may not, have been a typical assemblage of women, and the results of the survey were probably more interesting than significant.—T. G. P.

American Game Protective and Propagation Association

The above is the title of an organization which has opened its headquarters at No. 111 Broadway, New York City. It was incorporated September 25, 1911, and in a prospectus recently issued the statement is made: "The credit of putting the movement into concrete form belongs to the arms and ammunition men of the country. These men subscribe liberally to the Association for the sole purpose of game protection and game increase. Their interests are identical with those of the Association. Contributions have been made without reservation, and the Association is in no way tied to any business interests, but is free to use its influence unrestricted for the broad and worthy cause for which it was organized. The Association's only battles will be fought for game protection."

The plans of the Association include a coöperation with the various game commissions of the country to secure a more vigorous enforcement of game laws; to stand back of wardens who have gotten into trouble through fearless obedience to duty; to create among the wardens and others whose duty it is to enforce the law the spirit of emulation and pride in their profession, and to give gold and bronze medals for meritorious service.

It believes in game refuges of all characters, and in the natural and artificial propagation of game. It desires to see reasonable and uniform game-restrictive laws enacted by the Legislatures in many states of the union wherein they do not now exist. It proposes, also, to expend funds in the actual enforcement of game laws by means of special agents employed for the purpose. It declares for laws providing a bag limit for game, absolute protection to insectivorous birds, prohibiting the sale of wild native game, and other measures calculated to protect and conserve the supply of American game-birds and animals.

The Association, while founded and heavily backed financially by the manufacturers of firearms and ammunition, also makes an appeal for people interested in this work to become associate members. There is a Board of eleven directors and twenty-two "honorary and advisory members,"—the latter including the names of many men who are prominent in game protective work.

The president and executive officer is Mr. John B. Burnham, who, for many years, was connected with the Forest, Fish and Game Commission of the state of New York. Mr. Burnham is a practical game protector, and a man whose personality has made a forceful impression on the people of the state. We predict that he will give a good account of himself in his new position.

In many respects, this new Association stands for objects for which the National Association of Audubon Societies has been fighting for years, and we welcome it to the fields of endeavor for

the preservation of our wild bird and animal life.—T. G. P.

Some Audubon Workers

IV. GEORGE BIRD GRINNELL

It was Mr. George Bird Grinnell who created the name "Audubon Society." This was over twenty-five years ago. It is easy to understand why the name and the ideals for which the Society stands came to be created in his mind, when one learns of the interesting environment of his youth, and the spirit for the preservation of wild life which has ever possessed and molded his activities.

Mr. Grinnell was born in Brooklyn, N. Y., September 20, 1849. When a very small boy, his parents moved to Audubon Park, New York City, which had formerly been the estate of John James Audubon, the artist-naturalist, and here for more than fifty years Mr. Grinnell lived in the same house, among scenes, almost unchanged, which had surrounded the great ornithologist during the last years of his life.

Madame Audubon, the widow of the naturalist, and her two sons and their families, occupied two of the houses on this estate, and in one of these Madame Audubon conducted a school for small children, which Mr. Grinnell attended.

He has told us something of the conditions of this early boyhood life. The walls of the Audubon home were decorated with antlers, from which hung guns, shot-pouches and powder-flasks. Portraits and paintings of birds and mammals, done by the naturalist and his sons, were seen every where. The loft of John Woodhouse Audubon's barn, where the boys often played, contained great stacks of the old red muslin-bound copies of the Ornithological Biographies, while against the walls were piled boxes of bird skins brought back by the naturalist from his various expeditions. John W. Audubon was constantly receiving boxes of specimens from distant parts of the continent, and often when he opened these shipments, he was surrounded by a group of small boys,



GEORGE BIRD GRINNELL

who stared in wonder at the strange creatures that he drew forth and held up for their inspection.

The associations of Audubon Park thus gave Mr. Grinnell an interest in birds and their ways which grew with his growth, and it cannot be doubted that it was the influence of these surroundings which, years afterward, led him to name the bird-protective society which he founded "The Audubon Society."

After graduation from Yale, in 1870 Mr. Grinnell went to the then Far West as one of a scientific expedition, headed by the great paleontologist, Professor O. C. Marsh, to collect vertebrate fossils, and a little later he went to New Haven, Connecticut, to become an assistant to Professor Marsh in the Peabody Museum of Yale, where he worked for years on vertebrate fossils.

In 1879, his health broke down, and it became necessary to seek a change of work. He was chosen President of the Forest and Stream Publishing Company, where, until a few months, he has had his headquarters. His connection with the paper began in 1876, as natural history editor. During nearly thirty-five years, therefore, he has been working in the direction of protecting wild life—at first game birds and mammals, and, when the fashion of wearing plumage began to increase in 1884 and 1885, in the protection also of song and insectivorous birds.

The idea of the Audubon Society originated with Mr. Grinnell who wrote an editorial published in "Forest and Stream" of February 11, 1886, in which was announced the formation of "an association for the protection of wild birds and their eggs, which shall be called the Audubon Society. Its membership to be free to every one who is willing to lend a helping hand in forwarding the objects for which it is formed. These objects shall be to prevent, so far as possible, (1) the killing of any wild birds not used for food; (2) the destruction of nests or eggs of any wild bird, and (3) the wearing of feathers as ornaments or trimming for dress."

For a number of years previous, the business of collecting small birds and plume-birds as ornaments for women's dress had been going on in a small way, but it was not until 1885 that the danger to bird life assumed proportions which were actually alarming.

As newspaper man, member of the American Ornithologists' Union, and one who for years had kept well in touch with wild life all over the United States, Mr. Grinnell had clear ideas as to the dangers threatened to the country by this wholesale destruction of bird life. On the other hand, it was difficult to determine how most effectively to combat the growing fashion of using plumage for decorative purposes. It was obvious that resolutions by scientific societies would accomplish very little, partly because they would reach a very small public, and more particularly because the average person among the 55,000,000 then in the United States felt not the slightest interest in what scientific associations resolved, or did not resolve. It seemed, therefore, that the only means of attacking the ever-growing evil was (1) to appeal directly to the women, and (2), slower but more effective, to interest the children in the birds, and to teach them to see the beauty and charm of bird life, as well as the enormous services which birds perform for man.

From the very beginning, the movement received the warm approval of the press and of the best people in the country. Literature was distributed in great quantities by the Forest and Stream Publishing Company, and the movement soon became widely known. Local secretaries were established in town after town all over the land. The members of the bird-preservation committee of the American Ornithologists' Union lent powerful aid. Such eminent citizens as Henry Ward Beecher, John G. Whittier, John Burroughs, Oliver Wendell Holmes, Bishop Potter, and a multitude of others came forward with warm commendations of the purposes and plans of the Society. In the course of two or three years the

Audubon Society had about forty thousand members scattered all over the country. The membership was absolutely free, and depended merely on the signing of the Audubon pledge. The expenses of the Society were all borne by Forest and Stream Publishing Company.

In February, 1887, the "Audubon Magazine" was established. It was devoted to the interests of Audubon workers, dealt with bird life and other natural history subjects, and discussed the economic problems of animal life in relation to agriculture and human welfare.

In the year 1888, notwithstanding the efforts put forth by the Audubon Society, and those interested in bird protection, the fashion of feather millinery continued to grow. The newspapers, which at first had so warmly supported the movement for bird protection, lost interest, and legislators and state authorities appeared to regard the protective laws which had been passed as nullities. Notwithstanding the attention that had been called to the ethical and economic aspect of this destruction, the headgear of the women continued to be largely made up of portions of small birds. At the end of 1888, the publication of the "Audubon Maga-

zine" ceased, for the expenses of the movement were too heavy to be borne by a single corporation, which, in fact, had another object than bird protection for its main purpose.

The seed sown by the original Audubon Society was not wholly lost, but the Society was in advance of its time. Much of this seed lay dormant for eight or ten years, and then, in the years 1896 to 1900, began to grow. The name of the Audubon Society was well known, and the revived movement found a certain public already well instructed in Audubon matters. In the last ten years, very largely through the patient, painstaking and enthusiastic work of William Dutcher, the Audubon movement has achieved the success of which we know so well today.

Mr. Grinnell, after being connected with "Forest and Stream" for thirty-five years, has within a few months given up his chair in that office, and is now devoting himself to literary work, with special reference to the habits and customs of the Indians of Western North America, with whom he has spent much time, both in the tepees and on the hunting-trails, and from whom he has gathered a great store of knowledge as yet unpublished.—
T. GILBERT PEARSON.





1. WHITE-THROATED SPARROW, Adult

2. WHITE-THROATED SPARROW, Immature

3. BLACK-CHINNED SPARROW, Adult

4. BLACK-CHINNED SPARROW, Immature

5. WHITE-CROWNED SPARROW, Immature

6. WHITE-CROWNED SPARROW, Adult

Bird = Lore

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The Duck Hawk on the Palisades

By WILLIAM COGSWELL CLARKE, New York City

IT may interest many in Manhattan to know that occasionally a Peregrine Falcon, or Duck Hawk, comes to town for the Pigeons that have their homes on certain buildings in the city.

In late December, a Falcon flew over as I crossed Fifth Avenue at Fifty-sixth Street. The sun of the early forenoon shone directly on the bird, flying rapidly just above the housetops, upward and away. As the bird passed, the rich dark plumage, barred in part with brownish yellow, was clearly in view against the blue of the winter's sky; the rapidly beating wings and the tail, widespread for the moment, were presented to good advantage. In January, in the middle of the day, a Peregrine for some twenty minutes widely circled over Sixth Avenue and Fifty-seventh Street.

This bird can easily come down from the Palisades, across the Hudson, to the center of the city in ten minutes, he travels with such vigor and swiftness. The proximity of the city's Pigeons, a ready food-supply, makes it more easy for the Falcons to pass part of the winter, at least, near one of their summer homes.

In late August, twenty-seven years ago, some haymakers in a Jersey meadow, just west of the Palisades, were amazed to see a Duck Hawk, that was pursuing a bird, plunge nearly at their feet into the long grass and bushes. The Falcon, in his haste, became entangled, and was caught before he could free himself. From his plumage and apparent inexperience, he was presumed to have been a young one of that season.

We kept him for several years in a cage so large that the bird was able to exercise, flying from perch to perch. No fear entered into his makeup; his equipoise was under no circumstances disturbed. A Red-tailed Hawk, if captured, will show a fighting front, but will at the same time manifest fear; never so a Peregrine Falcon. What respect this bold and self-possessed bird must have commanded in its intimate association with knights and ladies in the ancient days of Falconry!

Our Peregrine, perched upon my wrist, was never rough or at all familiar.

He would willingly accept food, and ate with dignity. He always insisted on perching on the highest point of an outstretched arm. Because of this, it was easy to seem to send the bird, by word of command, from the wrist to the shoulder, and to the wrist again. Lowering the arm, the Falcon stepped sideways until the shoulder was gained; and, then elevating the arm, the bird would walk back to the wrist.

Finally, we felt that our Falcon should have his freedom, so we carried him up to the Palisades and placed him on the cliff's edge. He flew out over and up the river. We watched him until he faded out of sight in the haze hanging over the water.

Several Falcon couples nest, even today, on the face of the Palisades, particularly near Clinton and Ruckman's Points. For those familiar with the location of a Falcon's nest, it is possible in the breeding-season, by standing on the cliff over one of their regular homes, such as the projection of rock just north of Clinton Point, to see a swift Peregrine dive from the ledge into the air immediately beneath. The bird, wheeling and circling with incredible rapidity, rarely sailing, emits a harsh, frequently repeated call of one note. Promptly the mate seems, since he possesses such speed, to jump into sight out of space, and as the pair circle the female is seen to be the larger. So long as one chooses to remain upon the edge of the Palisades, the two birds may be observed wheeling and shooting about, now out over the river and now close by; they pass with the speed of an arrow, impelled by rapid wing-beats, and at the same time calling loudly.

When viewed in the natural state and usually at some distance, the dark-colored, pointed wings, shapely body, short squat neck and head, great speed, and general fearlessness, serve to identify this medium-sized bird of the Falcon family. The general configuration of pointed wings, constantly flapping, and short neck, causes a Duck Hawk to simulate a huge Swallow, especially a Tree Swallow.

In the spring of 1911 we visited Clinton Point first on March 5, but did not see a Peregrine. Fearing that too many people now frequent this locality, we made several trips to the more remote Ruckman's Point, where we also failed to find any Falcons. On our second visit to Clinton Point, on March 19, the day raw and snowy, we were greeted by the welcome and familiar sight of a Peregrine diving from a dead, weather-worn cedar-tree, projecting from the face of the cliff. On April 9, the male flew from the cliff to his favorite tree, uttering his call, and sat in full view. While perched, the sound that he made resembled a whistling scream. These birds' solicitude for their nest, as evidenced by their loud calls, tends to accomplish anything but its concealment.

This day, looking into a deep horizontal opening half-way up the cliff, the female Falcon was discovered sitting on her nest. We watched her with our glass for some time. The bed upon which she had placed her eggs was bordered in front with green grass and overhung by projecting rocks. Since vegetation



THE DUCK HAWK ON THE PALMSADES
From the habitat group in the American Museum of Natural History

is not present in similar clefts in the rock face of the Palisades, in which earth falling from above cannot lodge, it is probable that the remnants of food left by these birds year after year have formed sufficient soil to give grass an opportunity to flourish—silent but convincing testimony that Peregrines have always, figuratively speaking, fed and raised their broods upon this shelf overlooking the Hudson. Just twenty-four years ago, a friend sketched the nest and spot occupied, that spring, by some ancestors, doubtless, of our present family. The female today sitting upon her eggs turned her head so that first one eye and then the other glared at us as we watched her. The slate-colored back and dark wings, darker than the rock, suggested black shadows in the depths of similar holes and clefts. The bright yellow cere and light buff plumage of the throat were interrupted by her black bill. Why should color-protection be necessary for so capable a bird? Of the wild creatures, only a Crow would do harm to unprotected Peregrine nests situated in such wild and inaccessible places.

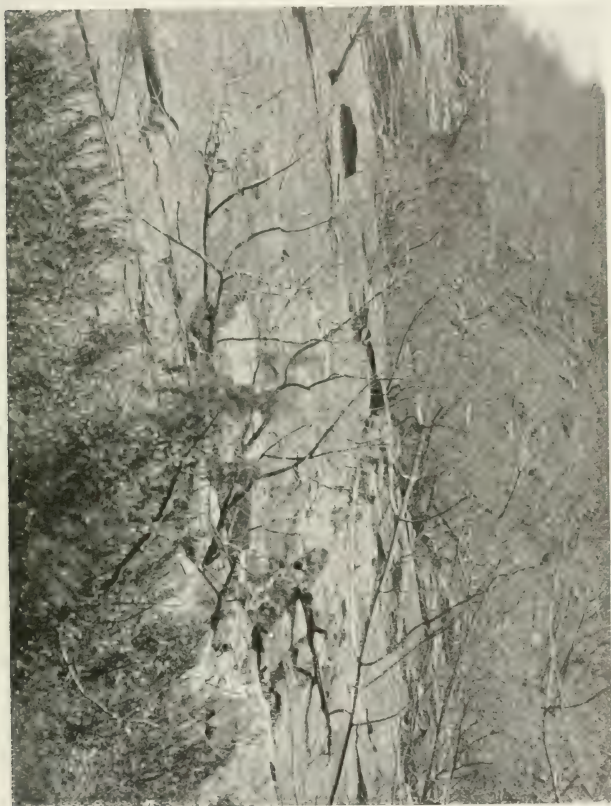
The sun coming out, the rich plumage of the sitting Falcon, the shelf in the precipitous face of the cliff, and the fringe of green grass directly in front of the bird, presented a splendid scene. I finally climbed to a point nearly over her, and she left her nest, revealing four eggs. Their color blended well with the rock on which they were lying, just behind the green grass. The female, now in the air, made the squawking sound similar to, but hoarser than, that of the male bird.

On April 16, we reached Clinton Point at 6.30 A.M. Clouds covered the sky, the accompaniment of an April shower. The female was at the moment returning to her nest, possibly from a foraging expedition across the river. When she saw us, she perched upon a projecting tree, while her mate circled about, calling. A sudden snow-squall swept over. We withdrew for a time, fearing that the eggs, still unhatched, might be injured by her prolonged absence from the nest. Shortly the clouds broke, the morning sun illuminated the sheer cliffs confronting the east, and in the flood of bright light the breast of the sitting Falcon shone as a white spot set in the dark gray rock.

Our next visit was on April 24, but we remained only long enough to see that there were now but three eggs. On April 30, two eggs had hatched; presumably the two others had been failures. The young birds were covered with grayish white down, and apparently had been hatched some days before. While able to hold up their heads, they could not as yet use their legs. Many feathers were lying on the ledge, indications that the parent Falcons had had good hunting. It was difficult at that distance to identify them, but several were the size and shape of the wing feathers of domestic Pigeons. Besides these, two bright yellow ones lying in full view probably came from the wing of a Flicker. The female Falcon was, on this occasion, even more noisy and solicitous than on any of our previous visits. Since we saw the four eggs first on April 9, and they did not hatch until just after the 24th, incubation must

have commenced in the first week of April, probably about the third of the month.

When we reached the Point on May 4, a clear, seasonable day, the female



NESTING-SITE OF THE DUCK HAWK

The female is on the nest on the ledge above the pendent dead cedar, showing her light breast and dark back. April 16, 1911, 7:30 A. M.

Falcon was found hovering her two young ones. Since our last visit, they had grown considerably and had increased in vigor, although they could not stand. On the ledge there were a large number of yellow, black-tipped, wing feathers of the Flicker. The male Falcon was not in sight, and it was more than an hour

before we heard, off in the distance, a Peregrine calling. The female, at the moment, was sitting in sight on the cedar stub. A Falcon, flying with great speed, was immediately sighted coming up the river. Instantly he was upon us. Calling, he circled in from over the river and perched upon the face of the cliff. If at this time the male had been off hunting, he brought back no food to the aëry.

On May 13, the young birds were still safe and sound, sitting on their shelf of rock. They had not lost their downy coat. But on May 15, we were disappointed to find that both young ones had disappeared; the female alone greeted us as she flew from the ledge. She acted greatly disturbed. Two sets of initials were discovered, freshly cut into the rock just above the nest. If those who cut the initials removed the young birds, let us trust that they may return in the years to come and read their inscription in the living rock of the Palisades, a worthy monument to fast-disappearing bird families, particularly the Peregrine Falcon. If such interesting and famed birds, nesting in the New York and New Jersey Interstate Park, are to be exterminated, one of its attractive features will be lost. Soon the rock alone will be left for our descendants, as a reminder of the past.

A momentary glimpse of bygone days was afforded us on May 29, our last visit. The female Falcon, who had been sitting upon her cedar in quiet and solitary grandeur, flew by, uttering a single note. Suddenly, coming down the river directly toward us, we saw a large flock of domestic Pigeons. For the moment they suggested scenes the Palisades must have witnessed in the past, when swarms of Wild Pigeons took the same line of flight. A pair of Phœbes alternated, flying in and out of a deep crevice beneath us, where probably they had a nest.

Let us hope that no accident will befall the Falcons. Perhaps, another year, they may be successful, and some young Falcons may grow up to replace the old birds when they fall by the wayside.



The Barred Owl at Rhinebeck, N. Y.

By MAUNSELL S. CROSBY

WHEN I first came to Rhinebeck, in 1895, Screech Owls were the only common Owls and could be heard calling every evening. In winter, an occasional Snowy Owl was shot by village "sportsmen," and once or twice a Great Horned Owl was reported to me, although I never saw one myself. One autumn, a Short-eared Owl appeared for a week or more, on his way south, appropriated and beheaded a hen, and feasted nightly on her dwindling remains.

It was in 1901 that I heard the first Barred Owls. They came in March, and at once made themselves noticed by their loud hooting and hissing. I presume they were fortunate in rearing a brood, for they returned in 1902, and chose a dilapidated barn on my place for their nesting-site. I had never before heard of such a site being used, especially as there were no trees very near, and, as I was away at the time, I questioned the fact, but was assured of its truth



BARRED OWL

by several of my men. On my return, I heard that a laborer had killed the mother bird, when he found her in the hay-loft, and had brought three owlets, fully feathered but unable to fly, to my farmer, who fed them on raw meat until I came to take charge of them. One fell off the limb of a tree where he had been put, and died from the effects, but the other two lived and thrived.

I kept them in a large stone barn and fed them on raw meat, mice, and young English Sparrows. Although these were always dead when I brought them, the

Owls invariably crushed their skulls with their beaks, and then swallowed them whole, head first, with much effort and a very human opening and shutting of the eyes. The only sounds they uttered were a threatening snapping of the bill and a peculiar hissing with a rising inflection, accompanied by a side-to-side swaying of the body. On seeing me approach, they would fly down to me



YOUNG BARRED OWLS

from their favorite rafter, and alight on the floor with their legs stretched out in front of them like Ducks striking the water. They were able to distinguish me from strangers and, when frightened, snapped their beaks and ruffled their feathers till they appeared very formidable.

The barn door was often open, and one day they left it and flew to the nearest trees, and from then on gradually made their way further and further up the drive till they reached some woodland, where they took up their permanent quarters. One of them became quite shy, but the other still flew down occasionally into the road when I called him and whistled to him. But before winter he too became retiring, like the rest of his race.

Since then, there has been a pair in my wood every year. In summer their headquarters are among some tall oaks, and in winter they perch in a group of Norway spruces very near the house. I have never succeeded in finding the nest, but in July the young fly quite tamely about in broad daylight on the edge of my pond and near the house. Both old and young hiss and hoot at all hours of the day and night, and fly fearlessly about in the open, although too often pursued by Crows, Jays, Kingbirds, and Robins. The only damage I can attribute to them is the destruction of a nestful of young Catbirds and of a brood of young Mallards. Since that episode, my Ducks have been kept safe by the simple expedient of hanging rags from strings criss-crossed over their yard. I have never known a Barred Owl to attack an adult bird.

On the night of May 24, 1909, a full-grown Barred Owl flew in at the open gate of my empty pheasant-yard, in pursuit, perhaps, of a rat or a mouse, and was unable to find his way out. I discovered him there the next morning, and locked myself and my camera in with him. He was on the ground, and, when I approached him, snapped his beak angrily and rolled over on his back. In reaching down for him I inadvertently stepped too near, and instantly his talons seized my leg and gave me a good warning of what he could do. I found he had no intention of using his beak, so I seized him by the "shoulders;" but somehow he managed to reach me with his claws again and I quickly dropped him, for he raked my wrists like a cat. I finally caught him with a cloth, and thus transferred him to a perch which I had prepared. It was a long time before he would stand on it, as he kept flopping over backward or forward and hanging head down by one foot. He always let go, however, before I could catch him with the lens in this original pose. I eventually obtained several photographs of him and then let him out, but, instead of flying away, he scurried under a tool-house and remained there at bay.

The next day, I found him in the pheasant-yard again, hiding in a corner with his eyes almost closed. I photographed him without letting him know that I had discovered him, and then gave him raw meat and water, which he refused to touch. On May 26, I found him on top of another outbuilding, and when I approached he tried to fly away, but, instead, fell headlong to the ground. I now discovered that one of his wings had been injured, probably when trying to find his way out of the yard on the first night. I put him back in the yard, and, as he still refused butcher's meat, I shot a chipmunk and set it before him. By next morning, not a hair remained to tell of the feast; so I gave him an English Sparrow, and by nightfall only a few feathers were left. On the 28th I gave him a mouse and another Sparrow, and later found him with the mouse half-way down his throat, only the hind feet and tail being visible. He had evidently had enough to eat. I also found a pellet under his roost, apparently made up chiefly of chipmunk remains, and the next day another consisting mainly of Sparrow feathers. Thus it apparently took from two to three days for the pellets to form.



"HIDING IN A CORNER WITH HIS EYES ALMOST CLOSED"

I refrained from feeding him for two days, but on June 1, he ate a chipmunk, and that night a red squirrel. On June 2, I found him perched on the tool-house, and on the third he was in a large maple near-by, after which he went back to the woods apparently as well as ever. He did not seem to be afraid of me after the first day or two of our acquaintance, but he never let me see him eat, although my frequent visits proved to me that he ate as often in the daytime as at night.

A few days later, I found a dead young Barred Owl near the same yard, but could find no clew to the cause of its death.

The Barred Owls are still with us, though I see them less often than I used to, and the Screech Owls are beginning to be heard again in their old haunts.



CROW ATTACKING A STUFFED GREAT HORNED OWL
Photographed by Henry R. Carey, at Portsmouth, N. H., July 4, 1909

A Bluebird Study

By L. CLAUDE, Baraboo, Wis.

ON May 26, two Bluebirds were caroling gaily on the vine stakes near the house, and I suspected that they had a nest in the plum thicket close by. A search revealed the nest in one of the old stubs, but still empty. So I concluded that they had raised their first brood and were preparing for the second.

Three days afterward, there were three eggs in the nest, and the female was sitting. From then on, during all the incubating period, the Bluebirds were very quiet, their manner in this respect being quite different from what it had been the day I first noticed them.

The first time I saw the young Bluebirds after they were hatched, they seemed to be suffering from the heat, though there was a crack at the back of the nest which should have given ventilation. The old birds made some objection to my examining their nest, and the male circled over the stub, and then flew to another plum tree, followed by a full-grown nestling, who appeared more excited and disturbed than he did.

Everything that the old birds did was watched with interest by this nestling, whose conduct was most unusual. As the old Bluebirds permitted the young one to be with them, and to approach the nest, without molesting it; and as it used the same trees and branches, and was so evidently at home in that particular spot, I could only think that it was one of the nestlings of the first brood. For all who are conversant with the ways of birds know that they are exceedingly jealous of any encroachment on their particular haunts, especially during the nesting-season, when each separate family guards its own home spot, and the usual approaches to it, most vigilantly.

But, should the young bird not have belonged to that family, its next proceeding was none the less surprising. For it soon came with a worm, and hovered near the nest, but did not actually go to it, behaving just as the old birds did, when made nervous by my presence.

It was some time before the male Bluebird could decide to feed the young ones that morning, but at last he did it. And his mate was still slower in making up her mind.

The next time I came to watch the Bluebirds, there was the usual period of trouble before they could settle down to their regular work of attending to the young in the nest. And again it was the male who fed them first. Soon after the young bird appeared and alighted on the stub containing the nest. He carried a large insect, and, in an instant more, came to the nest and, leaning in, fed the young, then lingered, looking in, as the old birds do before going away.

Amazing as this proceeding was, it was evidently something that he was quite accustomed to do, and it gave point to all his unusual conduct. After

he had shamed the still-hesitating mother bird by his courage, the nestling rested on a dead branch of their favorite white oak, while the timid little mother sat in a plum tree and looked thoughtful. Before long, the nestling came again to the stub with food, and looked about, trying to get up courage to feed the young. He uttered low baby notes, and was rather awkward in his way of approaching the nest, and at last went away without feeding the young ones. The female finally recovered from her timidity enough to continue feeding her family, but it was always an effort for her when I was in sight, though, when she actually reached the nest, she did not seem particularly frightened, and usually lingered to take a critical look at her offspring before leaving them.

Soon the nestling appeared again, carrying a small green caterpillar, and alighted in the plum tree nearest the nest; and, after a short hesitation, he flew to the stub rather awkwardly, and uttered his baby notes as he turned to look about, then, still with some awkwardness, flew to the nest and fed the young, and waited, looking at them as usual. He had a way of watching me intently, but not with real nervousness, and I fancied that if the old birds had not showed alarm he would have paid me very slight attention. When he came again, he brought a large brown caterpillar, and alighted just above the nest, chattering and watching me, hesitating and leaning over, seeming, as usual, rather uncertain how he should approach the nest. At last he flew down, trying quite a new way, and, coming from below, landed nicely at the nest.

When the male Bluebird came to the nest, it was usually with a bold swoop, but so quietly that, unless you had your eyes on the spot, you did not know he had arrived until you heard the young ones greeting him.

On the whole, the three older Bluebirds were very quiet at this stage of the proceedings, only now and then warbling low greetings to each other, or the young ones chattered when they came with food.

They were a most winning family, but nothing could be imagined more utterly charming than the nestling, with his pretty hesitations, his courage, and his air of responsibility mingled with the evidences of his extreme youth. As time went on, and the young Bluebird continued to feed the young ones regularly, it became evident that his doing so was no mere accident, and for some reason this particular nestling had taken upon itself to assist (as I believe) in bringing up the nestlings of the second brood belonging to his parents, though his actions would be still more remarkable if he should be assisting a strange bird. Unfortunately, it was not possible to determine the sex of this altruistic nestling, for at that age both sexes wear the same plumage.

On June 22, the nestling was feeding the young and cleaning the nest, just as the old birds did, though not so certain in his way of approaching the nest, and wanting in that clock-like regularity which is so remarkable in old birds when undisturbed; and he announced his arrival at the nest by chattering, instead of coming with the smooth silence of the parents.

One afternoon, when all had been going on very quietly with the Bluebird family, the male suddenly flew into a white oak near-by, making a queer snapping noise, and the female promptly joined him. Both were greatly excited, and I saw that they were furiously and silently, except for the snapping of their bills, pursuing a red squirrel, who was evidently frightened, and ran back and forth trying to get away from them, and they did not leave him until they had driven him out of the white oak, and into some pines further from the nest. Then they came back, and resumed the business of feeding the young. Later the red squirrel appeared again, and was again chased off by the Bluebirds, with the same snapping of bills and fierce intentness.

The young Bluebird watched every bird that came near the nest, chattering at them and attacking them if they were inclined to fight, and showing as great a sense of responsibility as the old birds.

The crack at the back of the nest was widening, and becoming a danger to the young birds in the nest. By June 26, the notes that came from the nest were true Bluebird notes, not the mere squeaking of the earlier days, and the little beaks were frequently seen at the entrance of the nest.

Late in the afternoon of the 26th, when I came again to the Bluebirds' nest, the nestling and the female flew away in an agitated manner. I came close to the nest, and the afternoon sunshine fell directly on the entrance, lighting up the interior, so that I could see one young one looking very alert and wide-eyed. On the ground was a tuft of tiny bluish gray feathers, bloody at the ends. Something had evidently happened.

I did not then go nearer the nest for fear of further disturbing the remaining young, and making the parents more unhappy. But, the next morning early, I went out to the nest. Going to the back of it, I saw that the crack had been widened still further, and the nestling that was pressed against it was dead. Some enemy, seeing the crack, had enlarged it and, having killed the young bird, tried to draw it out to eat it, for the feathers that were scattered about had been roughly pulled out. As it seemed impossible for the living to exist in such close quarters with the dead, I removed the dead nestling, greatly to the distress of the parents and the older nestling.

That afternoon, the birds were attending to their regular duties, though rather more nervous than usual. It was astonishing to see how alertly the little heads came out of the nest now when food was brought, and once one of the young ones put its head out of the opening and, looking about with evident interest, called once or twice. They showed great excitement when the food arrived and, after the old birds left them, their heads were stretched out longingly, and the suggestion of coming flight could be seen in every motion. The female no longer came quietly to the nest, but chattered excitedly, sitting just above the nest before feeding the young, holding the food, and uttering at intervals a note that even to a human, had a compelling quality, and, each time she uttered it, she looked inquiringly toward the nest; seeming to call

the young to her, but they did not come, and she would feed them at last. Once after she had gone, one of the nestlings leaned out of the nest, looking up and down, and straining against the side of the nest, with that peculiarly significant motion that so suggests flight; then it called and, as the male came with food, it called again.

The two old birds and the older nestling came now constantly back and forth, to and from the nest, and their notes were heard most of the time. Presently one nestling looked out, came to the side of the nest and, with a curious half-frightened note, swayed forward as though about to leave the nest, but fell back. The next time the female came to feed the young her calls were so urgent that she nearly succeeded in getting them out of the nest, only natural timidity preventing them.

This particular calling of the female to the young was so different from any of her other notes, and of so peculiar a quality, that one could not fail to feel and understand it. And at the same time, her whole body seemed to call the young, and one could fancy that not only did her notes draw them toward her, but that every motion of their small bodies indicated that her influence was struggling with their fear.

It is almost impossible to imagine what that first flight must mean. Ever since the young bird was hatched, it has been crowded closely against its fellows, in semi-darkness, with no chance to use its wings except to flap them for exercise. Then suddenly there comes a time when it must leave all this, and launch out into a world hardly seen, and trust to those unused wings to land it safely. No wonder they hesitate.

There are no words to interpret the yearning that is expressed in the motions and notes of young birds, as they feel the first longing for flight. They look out, and lean against the edge of the nest, seeming to struggle against it; then there is the poising on the edge of the nest, the timid shrinking and falling back, and then at last the courage of that final plunge into the air, the first trial of the tiny soft wings that have been so cramped in the narrow, dark nest; and then the wondering glances of the bright eyes, as the world "so beautiful, so various, so new" opens before the escaped nestling.

The male did not call the young, as the female did at this time, and he had a way of silently jabbing the food into his offspring's open beak, that was a great contrast to his mate's present volubility. As the afternoon wore on, the female became more and more insistent in her calling, and the young grew very restless, leaning out, and then flapping their wings so that they made a great deal of noise. Once they made so much disturbance with their wings that both parents flew up excitedly, to see what was the matter. Then the female flew to a twig below the nest, and plainly called to the young to come out. This time she succeeded, and the most adventurous of the young ones took its first flight.

There was at once a great outcry from his relatives, as he awkwardly

fluttered into a low plum bush, and after a few more flutterings landed on the ground. Seeing that he could not raise himself very well, I picked him up, amid the loud and excited protests of his relatives. He made no attempt to escape, and did not utter a sound or seem frightened, only his claws clung instinctively to the grass, and he panted slightly with the exertion of his venture.

He was exceedingly pretty, but looked too young to be out of the nest. His tail was very short, and his eyes seemed unusually large and bright. Thinking that he would be safer in the nest, I climbed up and replaced him, and he, as soon as he could get his breath, turned around and came out again, this time reaching a fairly safe place in one of the larger plum bushes. So, after watching for a few moments, to see that he did not fall again, I left him, and, thinking that I would only complicate matters by staying, I did not wait to see the other nestlings leave the nest.

The next morning when I went out, the plum thicket was quiet and deserted. And, though I made some search for the young Bluebirds, I could not find them; but for the rest of the summer I heard them from time to time, and often saw the old birds.



AN EARLY MIGRANT

Photographed by Guy A. Bailey, at Geneseo, N. Y.



THE ORIZABA FAUNAL GROUP

Background painted by Bruce Horsfall, from studies by Henry A. Ferguson and Louis Agassiz Fuertes. Accessories prepared by William Peters, Birds mounted by Henry C. Raven

The Orizaba Group in the American Museum of Natural History

THE last addition to the series of panoramic bird groups in the American Museum of Natural History might be called a Faunal Group rather than a Habitat Group, the term which has been applied to its predecessors. Unlike them, it is not designed to show one or more species of a definite locality, but the more characteristic species of a faunal area,—namely, the forest-inhabiting species of tropical eastern Mexico. It is also intended to serve as an object-lesson, in the influence of altitude on the distribution of life.

The observer is supposed to be standing in the dense tropical forests which clothe the foothills of the Sierras. In the luxuriant tropical vegetation about him are Parrots, Toucans, Trogons, Motmots, and other equally characteristic tropical birds, and from their home he may look 10,000 feet upward to the Boreal Zone on Mt. Orizaba, where, in the grand forests of pines and spruces, Crossbills, Evening Grosbeaks, Juncos, Brown Creepers, and other northern types of birds, are nesting.

To encounter so radical a change, at sea-level, would require a journey at least to northern Maine. Here the change is occasioned by altitude rather than latitude, and an altitudinal journey of less than three miles produces as striking a faunal difference as would a latitudinal one of 3,000 miles. Indeed, one might travel from the Equator to the Poles without experiencing more profound variations than one finds in passing from the Tropical Zone, at the base of the mountains, through the Temperate Zone on their sides, to the Boreal Zone above; and thence, beyond the limit of life, to the everlasting snows which crown the summit of Orizaba (alt. 18,225 feet).

It is aimed to demonstrate the significance of the facts depicted in the group by the use of large colored transparencies, set one above the other in panels on each side of the group, and at a proper distance from it. These transparencies were made from photographs representing typical scenes in the Tropical, Temperate, and Boreal Zones, and above timber-line. At the bottom is the picture on which was based that part of the painting which shows the tropical forests. Above it is a view in the oaks of the Temperate Zone, and over this are pictures in the pines and spruces, and among the rocks and snow above timber-line. These pictures thus supply details of the view contained in the background, and form, as it were, a vertical section in the Sierras from sea-level to snow-line.

The accompanying photograph merely suggests the method of treatment, without conveying a true impression of the unusual beauty of the group itself or of the illusion of depth and distance which has been created.—F. M. C.

The Migration of North American Sparrows

FIFTEENTH PAPER

Compiled by Professor W. W. Cooke, Chiefly from Data in the Biological Survey

With Drawings by LOUIS AGASSIZ FUERTES

(See frontispiece)

WHITE-CROWNED SPARROW

The summer home of the White-crowned Sparrow, in the eastern part of its range, lies north of the United States, and these individuals winter in the southern half of the eastern United States. The migratory movements of these White-crowned Sparrows are fairly well shown in the accompanying tables. But in the Rocky Mountain region and to the westward, this species breaks up into several forms, one of which (*leucophrys*) breeds in the United States south to New Mexico and central California; another (*gambeli*) breeds, for the most part, north of the United States; while, in the case of the third (*nuttalli*), the summer and winter homes overlap for several hundred miles from southern California to central Oregon. The data on hand indicate that these forms migrate at widely differing dates, but there is not enough material available to make detailed statement of these differences.

SPRING MIGRATION

PLACE	Number of years' record	Average date of spring arrival	Earliest date of spring arrival
Bakersville, N. C.			April 23, 1886
White Sulphur Springs, W. Va.			April 28, 1893
Washington, D. C.	6	May 1	April 26, 1908
Beaver, Pa.	5	May 3	April 18, 1891
Renovo, Pa.	15	May 4	April 22, 1903
Williamsport, Pa.	5	May 9	May 1, 1890
Ithaca, N. Y.	6	May 4	February 24, 1906
Ballston Spa, N. Y.	5	May 5	April 23, 1894
West Winfield, N. Y.	7	May 7	May 3, 1910
Alfred, N. Y.	7	May 10	April 29, 1892
Portland, Conn.			March 20, 1875
Beverly, Mass.	4	May 16	May 12, 1900
St. Johnsbury, Vt.	12	May 6	April 28, 1905
Monadnock, N. H. (near)	4	May 12	May 6, 1905
Durham, N. H.	3	May 11	May 7, 1899
Westbrook, Me.	5	May 9	April 30, 1893
Phillips, Me.	4	May 13	May 11, 1909
East Sherbrooke, Quebec.	6	May 12	May 9, 1905
Scotch Lake, N. B.	6	May 13	May 8, 1901
Helena, Ark.	4	April 25	April 17, 1900
Odin, Ill.	5	April 23	March 6, 1892
Quincy, Ill.	3	April 20	February 9, 1889
Bloomington, Ind.	8	April 23	April 10, 1902
Brookville, Ind.	7	April 30	April 27, 1888
Chicago, Ill.	18	May 3	April 24, 1896
Waterloo, Ind. (near)	7	May 3	April 30, 1896
Wauseon, Ohio.	14	May 2	April 28, 1896

SPRING MIGRATION, continued

PLACE	Number of years' record	Average date of spring arrival	Earliest date of spring arrival
Oberlin, Ohio	16	May 1	April 22, 1902
Cleveland, Ohio	10	April 30	April 20, 1881
Plymouth, Mich.	10	May 3	April 28, 1897
Petersburg, Mich.	8	May 6	May 1, 1887
Detroit, Mich.	9	May 7	April 27, 1889
London, Ontario.	4	May 6	May 2, 1901
Ottawa, Ontario.	24	May 7	April 30, 1906
North Freedom, Wis.	3	April 29	April 25, 1901
LaCrosse, Wis.	5	April 26	April 20, 1902
Manhattan, Kan.	5	May 3	April 26, 1884
Southeastern Nebraska.	4	May 2	January 16, 1891
Lincoln, Neb.			April 22, 1899
Southeastern South Dakota.	8	May 4	April 24, 1889
Pilot Mound, Manitoba.	5	May 6	April 30, 1905
Indian Head, Saskatchewan	5	May 10	April 26, 1908
Flagstaff, Alberta.	4	May 12	May 7, 1906
Fort Providence, Mackenzie.			May 9, 1904
Fort Simpson, Mackenzie.	3	May 21	May 20, 1904
LaPierre House, Mackenzie.			May 25, 1863
Fort Anderson, Mackenzie.			May 28, 1865
Yuma, Colo.	5	April 15	March 21, 1907
Boulder, Colo. (near).	6	April 18	February 22, 1910
Colorado Springs, Colo.	6	April 21	March 10, 1907
Cheyenne, Wyo.	3	April 23	April 18, 1889
Terry, Mont.	5	May 5	April 21, 1900
Columbia Falls, Mont.	4	April 30	April 28, 1896
Newport, Ore.	5	April 6	March 10, 1895
Portland, Ore.	3	March 25	March 20, 1908
Tacoma, Wash.	6	April 7	January 22, 1908
Chilliwick, B. C. (near)	5	April 19	April 5, 1889
Okanagan Landing, B. C.	3	April 21	April 19, 1906
Kowak River, Alaska.			May 21, 1899

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Weaverville, N. C.			May 8, 1890
French Creek, W. Va.			May 22, 1890
Washington, D. C.	7	May 14	May 18, 1884
Beaver, Pa.	6	May 18	May 23, 1899
Renovo, Pa.	7	May 13	May 25, 1896
Englewood, N. J. (near)	5	May 19	May 22, 1899
New York City, N. Y.			May 30, 1882
Portland, Conn.			May 22, 1888
Beverly, Mass.			May 22, 1901
Monadnock, N. H. (near)	4	May 24	May 30, 1906
Westbrook, Me.			May 24, 1895
Scotch Lake, N. B.	7	May 23	May 25, 1905
New Orleans, La.			May 2, 1897
Helena, Ark.			May 7, 1897
Bellevue, Tenn.			May 22, 1895
Lexington, Ky.			May 22, 1904
St. Louis, Mo.	6	May 17	May 22, 1907
Monteer, Mo.	3	May 20	May 27, 1908
Bloomington, Ind.	5	May 11	May 16, 1903
Brookville, Ind.			May 27, 1892

SPRING MIGRATION, continued

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Waterloo, Ind. (near).....	7	May 17	May 26, 1907
Oberlin, Ohio.....	11	May 18	May 21, 1904
Wauseon, Ohio.....	8	May 18	May 30, 1884
Chicago, Ill.....	13	May 22	May 31, 1906
Detroit, Mich.....	7	May 19	May 22, 1909
Plymouth, Mich.....	8	May 20	June 1, 1889
Grinnell, Iowa.....	3	May 18	May 20, 1890
North Freedom, Wis.....			May 23, 1902
Brownsville, Tex.....			May 2, 1909
Gainesville, Tex. (near).....	8	May 4	May 11, 1877
San Angelo, Tex.....			May 19, 1884
Springfield, Colo.....			May 15, 1905
Yuma, Colo.....	9	May 14	June 10, 1907
Cheyenne, Wyo.....			May 26, 1889
Aweme, Manitoba.....	6	May 17	May 18, 1907
Indian Head, Saskatchewan.....	5	May 23	June 1, 1906

FALL MIGRATION

PLACE	Number of years' record	Average date of fall arrival	Earliest date of fall arrival
Scotch Lake, N. B.....	4	October 4	September 23, 1904
Phillips, Me.....	6	September 30	September 22, 1904
Durham, N. H.....			September 29, 1897
Randolph, Vt.....			October 4, 1889
North Truro, Mass.....			September 30, 1889
New York City, N. Y. (near).....	5	October 12	October 4, 1904
West Winfield, N. Y.....			September 24, 1900
Morristown, N. J.....	3	October 12	October 11, 1907
Erie, Pa.....			September 10, 1900
Beaver, Pa.....	5	October 6	October 2, 1888
Renovo, Pa.....			September 28, 1905
Washington, D. C.....	4	October 14	October 1, 1910
Weaverville, N. C.....	2	October 18	October 16, 1889
Charleston, S. C.....			October 26, 1897
Fallon, Mont.....			September 5, 1908
Big Sandy, Mont.....	3	September 16	September 10, 1906
Cheyenne, Wyo. (near).....	3	September 7	September 4, 1884
Yuma, Colo.....	4	September 19	September 17, 1904
Aweme, Manitoba.....	5	September 24	September 22, 1906
Lincoln, Neb.....	3	September 29	September 28, 1893
Onaga, Kan.....	4	October 12	October 6, 1904
North Freedom, Wis.....	4	September 30	September 19, 1903
Central Iowa.....	6	September 29	September 25, 1889
Plymouth, Mich.....	2	September 21	September 17, 1894
Detroit, Mich.....	10	October 1	September 19, 1901
Toronto, Ontario.....			September 20, 1898
Oberlin, Ohio.....	5	October 2	September 26, 1896
Waterloo, Ind. (near).....	5	September 29	September 25, 1903
Chicago, Ill.....	4	October 7	October 2, 1893
Odin, Ill.....			October 1, 1895
Gainesville, Tex.....	4	October 24	October 21, 1879
Biloxi, Miss.....			November 10, 1905

FALL MIGRATION, continued

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Scotch Lake, N. B.....	5	October 21	October 30, 1901
Montreal, Canada.....			November 8, 1908
Phillips, Me.....	4	October 15	November 8, 1908
Belmont, Mass.....			November 5, 1898
New York City, N. Y.....	3	October 21	October 24, 1889
Ithaca, N. Y.....			October 28, 1908
Renovo, Pa.....	4	October 13	October 15, 1894
Washington, D. C.....	3	November 20	January 20, 1901
Raleigh, N. C.....			December 28, 1901
Kowak River, Alaska.....			September 2, 1899
Great Bear Lake, Mack.....			September 5, 1903
Nushagak, Alaska.....			September 18, 1903
Edmonton, Alberta.....			September 26, 1894
Indian Head, Saskatchewan.....			October 2, 1904
Aweme, Manitoba.....	4	October 2	October 4, 1896
White Earth, Minn.....			October 10, 1880
Lanesboro, Minn.....	4	October 10	October 14, 1888
Newport, Ore.....			October 13, 1900
Big Sandy, Mont.....	3	October 7	October 16, 1906
Yuma, Colo.....	4	October 17	October 24, 1906
Onaga, Kan.....	2	November 16	November 19, 1891
Ottawa, Ontario.....	15	October 8	November 4, 1887
Detroit, Mich.....	7	October 18	October 23, 1906
Chicago, Ill.....			October 28, 1906
Wauseon, Ohio.....	4	October 19	October 24, 1886
Oberlin, Ohio.....	2	October 15	November 8, 1890
Bicknell, Ind.....	3	November 23	January 22, 1906

WHITE-THROATED SPARROW

The White-throated Sparrow winters from the Potomac and Ohio valleys southward and breeds principally north of the United States. It rarely ranges west of the middle of the Great Plains.

SPRING MIGRATION

PLACE	Number of years' record	Average date of spring arrival	Earliest date of spring arrival
Philadelphia, Pa.....	6	April 7	Rare, winter
Beaver, Pa.....	8	April 20	April 10, 1891
Renovo, Pa.....	17	April 24	April 14, 1906
Morristown, N. J.....	6	April 19	February 5, 1905
Ithaca, N. Y.....	10	April 20	April 11, 1901
Alfred, N. Y.....	12	April 24	April 13, 1910
New York City, N. Y.....	22	April 22	January 4, 1909
Ballston Spa, N. Y.....	12	April 30	April 20, 1894
Hartford, Conn.....	11	April 24	April 7, 1901
Providence, R. I.....	9	April 20	January 20, 1905
Cambridge, Mass.....	5	April 23	January 31, 1890
Beverly, Mass.....	11	April 24	April 19, 1909
Randolph, Vt.....	5	April 26	April 18, 1891
St. Johnsbury, Vt.....	13	April 26	April 17, 1904
Tilton, N. H.....	4	April 25	April 18, 1908

SPRING MIGRATION, continued

PLACE	Number of years' record	Average date of spring arrival	Earliest date of spring arrival
Portland, Me.....	9	April 25	April 19, 1896
Phillips, Me.....	7	April 27	April 23, 1910
Plymouth, Me.....	18	April 29	April 20, 1894
St. John, N. B.....	11	April 27	April 14, 1890
Scotch Lake, N. B.....	11	April 28	April 22, 1906
Halifax, N. S.....	4	April 27	April 21, 1902
Pictou, N. S.....	3	April 28	April 26, 1894
North River, Prince Ed. Island.....	5	April 30	April 26, 1889
Montreal, Canada.....	6	May 2	April 18, 1908
Quebec City, Canada.....	18	April 29	April 20, 1896
Godbout, Quebec.....	2	May 9	May 4, 1887
Lake Mistassini, Quebec.....			May 20, 1885
Bloomington, Ind.....	4	March 13	January 29, 1903
Brookville, Ind.....	6	April 18	March 19, 1886
Waterloo, Ind. (near).....	13	April 20	March 29, 1890
Chicago, Ill.....	18	April 18	April 8, 1900
Rockford, Ill.....	6	April 23	March 22, 1894
Oberlin, Ohio.....	13	April 18	April 1, 1899
Wauseon, Ohio.....	9	April 30	April 15, 1886
Detroit, Mich.....	15	April 25	April 8, 1910
Petersburg, Mich.....	11	April 25	April 20, 1886
Ann Arbor, Mich.....	9	April 25	April 22, 1896
Bay City, Mich.....	8	April 30	April 23, 1889
Houghton, Mich.....	4	May 6	April 19, 1908
Plover Mills, Ontario.....	5	May 2	April 15, 1887
Ottawa, Ontario.....	27	April 26	April 15, 1908
Madison, Wis.....	10	April 23	April 17, 1908
Milwaukee, Wis.....	6	April 23	April 14, 1896
Ripon, Wis.....	5	April 22	April 17, 1908
LaCrosse, Wis.....	5	April 20	April 5, 1905
Keokuk, Iowa.....	10	April 20	February 26, 1895
Iowa City, Iowa.....	11	April 21	March 26, 1886
Grinnell, Iowa.....	5	April 18	March 25, 1890
Dewitt, Iowa.....	13	April 22	April 18, 1909
Lanesboro, Minn.....	10	April 19	April 8, 1889
Minneapolis, Minn. (near).....	12	April 24	April 17, 1903
Elk River, Minn.....	8	April 22	April 8, 1882
Gainesville, Tex.....	4	March 8	February 27, 1884
Manhattan, Kan.....	5	April 25	April 21, 1883
Badger, Neb.....	3	April 24	April 20, 1903
Grand Forks, N. D.....	3	April 26	April 23, 1908
Pilot Mound, Manitoba.....	4	April 28	April 23, 1908
Aweme, Manitoba.....	10	April 30	April 22, 1908
Yuma, Colo.....			May 3, 1908
Great Falls, Mont.....			May 12, 1890
Edmonton, Alberta (near).....	5	May 7	May 1, 1901
Indian Head, Saskatchewan.....	4	May 12	April 26, 1908
Fort Resolution, Mackenzie (near).....	3	May 18	May 14, 1860
Fort Simpson, Mackenzie.....			May 16, 1904

SPRING MIGRATION

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Tallahassee, Fla.	4	April 21	May 3, 1903
Gainesville, Fla.			April 27, 1887
Savannah, Ga.			May 11, 1909
Raleigh, N. C.	5	May 8	May 18, 1887
French Creek, W. Va.	4	May 9	May 12, 1892
Washington, D. C.	22	May 16	June 14, 1890
Philadelphia, Pa.	10	May 14	May 27, 1888
Beaver, Pa.	8	May 11	May 14, 1902
Renovo, Pa.	11	May 11	May 19, 1907
Morristown, N. J.	10	May 15	May 30, 1907
Englewood, N. J.	9	May 18	May 24, 1907
New York City, N. Y.	15	May 13	May 22, 1895
Hartford, Conn.	8	May 19	May 25, 1907
Providence, R. I.	8	May 14	May 21, 1899
Beverly, Mass.	10	May 12	May 26, 1906
New Orleans, La.	6	April 22	April 27, 1903
Biloxi, Miss.	2	April 24	April 27, 1910
Helena, Ark.	15	May 2	May 19, 1907
Athens, Tenn.	7	May 4	May 10, 1909
Eubank, Ky.	7	May 10	June 2, 1887
Lexington, Ky.	5	May 11	May 15, 1903
St. Louis, Mo.	6	May 16	May 24, 1883
Brookville, Ind.	3	May 6	May 8, 1886
Bloomington, Ind.	5	May 11	May 16, 1903
Waterloo, Ind. (near)	10	May 10	May 26, 1907
Chicago, Ill.	11	May 17	May 25, 1901
Rockford, Ill.	6	May 17	May 24, 1888
Oberlin, Ohio	15	May 16	May 21, 1904
Wauseon, Ohio	11	May 17	May 29, 1884
Petersburg, Mich.	11	May 12	May 20, 1893
Detroit, Mich.	10	May 19	May 26, 1907
Madison, Wis.	6	May 17	May 21, 1907
LaCrosse, Wis.	6	May 20	May 30, 1907
Mt. Vernon, Iowa	5	May 14	June 14, 1910
Keokuk, Iowa	9	May 10	May 19, 1895
Grinnell, Iowa	6	May 14	May 20, 1888
Lanesboro, Minn.	8	May 17	June 1, 1882
Minneapolis, Minn.	5	May 15	June 1, 1907
San Antonio, Tex.			April 30, 1891
Bonham, Tex.	2	May 5	May 7, 1891
Northeastern North Dakota	5	May 19	May 25, 1903
Stockton, Calif.			April 22, 1892

FALL MIGRATION

PLACE	Number of years' record	Average date of fall arrival	Earliest date of fall arrival
Taunton, Mass.	3	September 20	September 18, 1880
Providence, R. I.	8	September 24	September 13, 1908
Hartford, Conn.	5	September 22	September 14, 1909
New York City, N. Y.	8	September 25	September 18, 1887
Morristown, N. J.	5	September 24	September 18, 1908
Englewood, N. J.	7	September 24	September 17, 1887
Philadelphia, Pa.	9	September 22	September 17, 1885

FALL MIGRATION, continued

PLACE	Number of years' record	Average date of fall arrival	Earliest date of fall arrival
Beaver, Pa.....	6	September 22	September 19, 1908
Renovo, Pa.....	10	September 19	September 10, 1903
Washington, D. C.....	17	October 3	September 15, 1889
French Creek, W. Va.....	4	October 3	September 14, 1888
Raleigh, N. C.....	14	October 15	October 4, 1888
Charleston, S. C.....	3	October 13	October 9, 1897
Kirkwood, Ga.....	7	October 23	October 19, 1904
Tallahassee, Fla.....			October 27, 1904
Lanesboro, Minn.....	6	September 17	September 11, 1889
St. Anthony, Minn.....			September 5, 1899
Neligh, Nebr.....			September 18, 1900
Grinnell, Ia.....	6	September 23	September 15, 1889
Sabula, Ia.....	8	September 23	September 17, 1896
North Freedom, Wis.....	4	September 13	September 11, 1901
Chicago, Ill.....	12	September 18	September 2, 1907
Detroit, Mich.....	18	September 20	September 12, 1897
Oberlin, O.....	11	September 30	September 16, 1898
Waterloo, Ind.....	6	September 24	September 21, 1887
Monteer, Mo.....	5	October 10	October 5, 1905
Lexington, Ky.....	3	October 6	October 2, 1904
Eubank, Ky.....	7	October 13	October 3, 1886
Athens, Tenn.....	4	October 18	October 12, 1909
Helena, Ark.....	2	October 15	October 10, 1896
Covington, La.....			October 8, 1885
Ariel, Miss.....			October 13, 1897
Denver, Colo.....			October 5, 1892
Santa Rosa, Calif.....			October 13, 1898
Lawrence, Kans.....	3	October 14	October 7, 1885
Bonham, Tex.....	2	October 23	October 16, 1889

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Magdalen Islands, Canada.....			October, 9, 1899
North River, Prince Ed. Island.....	3	October 7	October 16, 1889
Pictou, N. S.....			October 21, 1894
St. John, N. B.....	7	October 20	November 20, 1888
Scotch Lake, N. B.....	5	October 23	October 29, 1909
Montreal, Canada.....	4	October 20	October 25, 1908
Phillips, Me.....	5	October 26	November 7, 1908
Plymouth, Me.....	5	October 21	November 2, 1891
Tilton, N. H.....	3	October 12	October 22, 1906
Rochdale, Mass.....	7	November 1	November 7, 1890
Providence, R. I.....	7	November 20	December 29, 1907
Hartford, Conn.....	6	November 2	December 12, 1888
New York City, N. Y.....	6	November 9	December 25, 1884
Renovo, Pa.....	11	October 25	November 3, 1906
Beaver, Pa.....	8	October 24	October 27, 1888
Philadelphia, Pa.....	8	November 1	Rare, winter.
Flagstaff, Alberta.....			October 10, 1909
Aweme, Manitoba.....	10	October 9	November 3, 1907
Southeastern Nebraska.....	4	November 5	November 16, 1904
Lanesboro, Minn.....	7	October 23	November 13, 1887
Grinnell, Ia.....	5	October 23	October 29, 1886
Sabula, Ia.....	9	October 25	November 3, 1892

FALL MIGRATION, continued

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Keokuk, Ia.....	5	November 17	December 8, 1896
North Freedom, Wis.....	3	October 23	October 29, 1904
Chicago, Ill.....	6	October 22	November 12, 1906
Houghton, Mich.....	2	October 9	October 13, 1906
Detroit, Mich.....	15	October 30	November 5, 1900
Ottawa, Ontario.....	15	October 19	November 9, 1893
Point Pelee, Ontario.....			January 30, 1909
Oberlin, O.....	7	November 5	January 1, 1906
Waterloo, Ind.....	8	October 29	November 4, 1894
Bloomington, Ind.....	3	November 13	November 22, 1903
Fallon, Mont.....			October 5, 1908
Douglas, Wyo.....			October 8, 1894
Pueblo, Colo.....	2	October 21	October 24, 1886

BLACK-CHINNED SPARROW

From its winter home in Mexico, the Black-chinned Sparrow comes north in spring, and its arrival has been noted in Cahuenga Valley, Los Angeles County, Cal., April 1, 1896; Johnson Cañon, Panamint Mountains, Cal., April 6, 1891; Huachuca Mountains, Ariz., April 4, 1902. The individuals that were seen at Tombstone, Ariz., February 13, 1910, and in the Santa Catalina Mountains, Ariz., February 26, 1885, may have been unusually early migrants, or they may have been birds that had wintered in the vicinity.

The last one was noted near Pasadena, Cal., September 10, 1897, and in the Big Hachita Mountains, N. M., November 24, 1889.

Notes on the Plumage of North American Birds

FOURTEENTH PAPER

By FRANK M. CHAPMAN

(See frontispiece)

White-throated Sparrow (*Zonotrichia albicollis*, Figs. 1-2). In juvenal (nestling) plumage, the White-throated Sparrow is heavily streaked below, the underparts at this age closely resembling those of a young Song Sparrow. The back, however, is of about the same color as that of the first winter plumage (Fig. 2), which, in late July and August, is acquired by molt of all the feathers except the tail and wing quills. Some birds of this age more closely resemble the adult below than the one figured, while in others, particularly females, there is no trace of a white throat, this part, with the breast, being gray, with a somewhat obscure spot on the center of the breast. This plumage has puzzled many bird students. In it, the underparts more nearly resemble those of a winter Swamp Sparrow than they do those of an adult White-throat. In April, both immature and adults undergo a partial molt and pass into adult

summer plumage (Fig. 1). Adults, in winter, resemble Figure 2 above, but have the white throat about as well defined as in Figure 1.

White-crowned Sparrow (*Zonotrichia leucophrys*, Figs. 5-6). The juvenal plumage of the White-crowned Sparrow differs much more from the first winter plumage than does that of the White-throat. So far as the underparts are concerned, they are both streaked and not unlike, but while the dorsal plumage of the White-throat resembles in color that of the winter plumage, which soon replaces it, the back of the nestling White-crowned is as strongly streaked with black as that of a young Song Sparrow, for which, indeed, it might easily be mistaken.

First winter plumage (Fig. 5) is apparently gained by molt of the body feathers and wing-coverts, and varies comparatively little. The adult plumage (Fig. 6) is acquired by partial molt the first spring, and thereafter the bird shows no color change, the adult in winter being like the adult in summer.

Three races of *Zonotrichia leucophrys* appear in the A. O. U. Check-List, as follows:

Zonotrichia leucophrys leucophrys (White-crowned Sparrow). *Range*: North America. Breeds in Hudsonian and Canadian zones of high mountains from southern Oregon to central California, and east to Wyoming and southern New Mexico, and from limit of trees in central Keewatin and northern Ungava to southeastern Keewatin, central Quebec, and southern Greenland; winters from northern Lower California, southern Arizona, southern Kansas, and the Ohio Valley (casually from the Potomac Valley), south to Louisiana and Mississippi, and over the Mexican plateau to Sinaloa, Jalisco, and Guanajuato.

Zonotrichia leucophrys gambeli (Gambel's Sparrow). *Range*: Western North America. Breeds in Boreal zones from limit of trees in northwestern Alaska and northern Mackenzie (rarely outside the mountains south of Great Slave Lake) south to central Oregon and central Montana; west to coast mountains of southwestern Alaska and British Columbia; winters from northern California and Utah south to San Luis Potosi, Mazatlan, Lower California, and outlying islands; casual east in migration to Minnesota, Iowa, Kansas, and eastern Texas.

Zonotrichia leucophrys nuttalli (Nuttall's Sparrow). *Range*: Pacific coast. Breeds in Humid Transition Zones from Port Simpson, British Columbia, to San Luis Obispo County, California; winters from central Oregon southward to Santa Margarita Island, Lower California.

Black-chinned Sparrow (*Spizella atrogularis*, Figs. 3-4). This Mexican relative of our Field Sparrow is not sufficiently well represented in the American Museum collections to enable me to describe its plumage changes. The adult female resembles the male, but usually has less black on the throat. The nestling plumage resembles the first winter (Fig. 4), and, unlike the corresponding plumage of *Spizella pusilla*, is not streaked below.

Bird-Lore's Advisory Council

WITH some slight alterations, we reprint below the names and addresses of the ornithologists forming BIRD-LORE'S Advisory Council, which were first published in BIRD-LORE for February, 1900.

To those of our readers who are not familiar with the objects of the Council, we may state that it was formed for the purpose of placing students in direct communication with an authority on the bird-life of the region in which they live, to whom they might appeal for information and advice in the many difficulties which beset the isolated worker.

The success of the plan during the ten years that it has been in operation fully equals our expectations; and from both students and members of the Council we have had very gratifying assurances of the happy results attending our efforts to bring the specialist in touch with those who appreciate the opportunity to avail themselves of his wider experience.

It is requested that all letters of inquiry and to members of the Council be accompanied by a stamped and addressed envelope for use in replying.

NAMES AND ADDRESSES OF MEMBERS OF THE ADVISORY COUNCIL

UNITED STATES AND TERRITORIES

- ALASKA.—Dr. C. Hart Merriam, Biological Survey, Dept. of Agr., Washington, D. C.
ARIZONA.—Herbert Brown, Tucson, Ariz.
CALIFORNIA.—Charles A. Keeler, Berkeley, Cal.
CALIFORNIA.—Walter K. Fisher, Palo Alto, Cal.
COLORADO.—Dr. W. H. Bergtold, 1460 Clayton Ave., Denver, Colo.
CONNECTICUT.—J. H. Sage, Portland, Conn.
DELAWARE.—C. J. Pennock, Kennett Square, Pa.
DISTRICT OF COLUMBIA.—Dr. C. W. Richmond, U. S. Nat'l. Mus., Washington, D. C.
FLORIDA.—Frank M. Chapman, American Museum Natural History, New York City.
FLORIDA, Western.—R. W. Williams, Jr., Tallahassee, Fla.
GEORGIA.—Dr. Eugene Murphy, Augusta, Ga.
ILLINOIS, Northern.—B. T. Gault, Glen Ellyn, Ill.
ILLINOIS, Southern.—Robert Ridgway, U. S. National Museum, Washington, D. C.
INDIANA.—A. W. Butler, State House, Indianapolis, Ind.
INDIAN TERRITORY.—Prof. W. W. Cooke, Biological Survey, Washington, D. C.
IOWA.—C. R. Keyes, Mt. Vernon, Ia.
KANSAS.—University of Kansas, Lawrence, Kan.
LOUISIANA.—Prof. George E. Beyer, Tulane University, New Orleans, La.
MAINE.—O. W. Knight, Bangor, Me.
MASSACHUSETTS.—William Brewster, Cambridge, Mass.
MICHIGAN.—Prof. W. B. Barrows, Agricultural College, Mich.
MINNESOTA.—Dr. T. S. Roberts, 1603 Fourth Avenue, South Minneapolis, Minn.
MISSISSIPPI.—Andrew Allison, Ellisville, Miss.
MISSOURI.—O. Widmann, 5105 Morgan St., St. Louis, Mo.
MONTANA.—Prof. J. M. Elrod, University of Montana, Missoula, Mont.
NEBRASKA.—Dr. R. H. Walcott, University of Nebraska, Lincoln, Neb.

- NEVADA.—Dr. A. K. Fisher, Biological Survey, Dept. of Agr., Washington, D. C.
 NEW HAMPSHIRE.—Dr. G. M. Allen, Boston Soc. Nat. Hist., Boston.
 NEW JERSEY, Northern.—Frank M. Chapman, Am. Nat. History, New York City.
 NEW JERSEY, Southern.—Witmer Stone, Academy Natural Sciences, Philadelphia, Pa.
 NEW MEXICO.—Dr. A. K. Fisher, Biological Survey, Dept. of Agr., Washington, D. C.
 NEW YORK, Eastern.—Dr. A. K. Fisher, Biological Survey, Washington, D. C.
 NEW YORK, Northern.—Egbert Bagg, 191 Genessee Street, Utica, N. Y.
 NEW YORK, Western.—E. H. Eaton, Hobart College, Geneva, N. Y.
 NORTH DAKOTA.—Prof. O. G. Libby, University, N. D.
 NORTH CAROLINA.—Prof. T. G. Pearson, Greensboro, N. C.
 OHIO.—Prof. Lynds Jones, Oberlin College, Oberlin, Ohio.
 OKLAHOMA.—Dr. A. K. Fisher, Biological Survey, Dept. of Agr., Washington, D. C.
 OREGON.—W. L. Finley, Milwaukee, Ore.
 PENNSYLVANIA, Eastern.—Witmer Stone, Acad. Nat. Sciences, Philadelphia, Pa.
 PENNSYLVANIA Western.—W. Clyde Todd, Carnegie Museum, Pittsburgh, Pa.
 RHODE ISLAND.—H. S. Hathaway, Box 1466, Providence, R. I.
 SOUTH CAROLINA.—Dr. Eugene Murphy, Augusta, Ga.
 TEXAS.—H. P. Attwater, Houston, Tex.
 UTAH.—Prof. Marcus E. Jones, Salt Lake City, Utah.
 VERMONT.—Prof. G. H. Perkins, Burlington, Vt.
 VIRGINIA.—Dr. W. C. Rives, 1723 I Street, Washington, D. C.
 WASHINGTON.—Samuel F. Rathburn, Seattle, Wash.
 WEST VIRGINIA.—Dr. W. C. Rives, 1723 I Street, Washington, D. C.
 WISCONSIN.—H. L. Ward, Public Museum, Milwaukee, Wis.

CANADA

- ALBERTA.—G. F. Dippie, Calgary, Alta.
 BRITISH COLUMBIA, Western.—Francis Kermode, Provincial Museum, Victoria, B. C.
 BRITISH COLUMBIA, Eastern.—Allan Brooks, Okanagan Landing, B. C.
 MANITOBA.—Ernest Thompson Seton, Cos Cob, Conn.
 NOVA SCOTIA.—Harry Piers, Provincial Museum, Halifax, N. S.
 ONTARIO, Eastern.—James H. Fleming, 267 Rusholme Road, Toronto, Ont.
 ONTARIO, Western.—W. E. Saunders, London, Ont
 QUEBEC.—E. D. Wintle, 189 St. James Street, Montreal, Canada.

MEXICO

- E. W. Nelson, Biological Survey, Department of Agriculture, Washington, D. C.

WEST INDIES

- C. B. Cory, Field Museum, Chicago, Ill.

GREAT BRITAIN

- Clinton G. Abbott, 153 West 73rd St., New York City, N. Y.

Notes from Field and Study

Prothonotary Warbler in Connecticut in November

On January 28, 1912, Miss Mary Jennings brought to me a Warbler that she had kept in a box on the north side of her house since it was picked up dead in front of a garage in the suburbs of New Haven, Conn., November, 27, 1911.

The bird had a tangle of plant fiber on one leg, which may have caused its death in a struggle for freedom. It was frozen hard and after thawing it out, I prepared the skin, and I could identify it as no other than a female Prothonotary Warbler.

The bird was taken to Dr. Allen, at the American Museum of Natural History, and he has pronounced it an immature female Prothonotary Warbler, the first recorded occurrence for Connecticut, and the latest seasonal record for the eastern states.

The skin has been presented to the museum.—WILBUR F. SMITH, *So. Norwalk, Conn.*

A Winter Oriole

On Wednesday, January 3, we had a rare visitor among our birds. It was a very beautiful male Baltimore Oriole. He was first seen at noon eating suet ravenously. The suet was tied on a limb about fifteen feet from the house, and we were able to examine the bird carefully with field-glasses.

One wing had been injured in some way, and the tip hung about an inch below the normal position. He was indeed a pitiful sight, as he clung to the limb, with feathers puffed out, literally cramming the suet. After eating steadily for five minutes or more, he sat in the near-by bush, sunning, for fifteen or twenty minutes, then flew away. We saw him again at the suet at 3 o'clock, and I was able to get a snapshot of him at a distance of sixteen or eighteen feet. On my attempt to draw nearer to him, he flew to an arbor

fifty feet distant, going swiftly but with some apparent difficulty, and we have not seen him since.

The ground was covered with snow, and although the temperature was 31°, he seemed to be suffering from cold.

We fear that he may have succumbed to the severe weather of the following days.—LOTTIE ALVORD LACEY, *Southport, Conn.*

A Second Winter Oriole

On Dec. 10, 1912, while visiting a favorite haunt of winter birds, along the Wyomissing creek, I saw a Baltimore Oriole. It was with flocks of Goldfinches, Juncos, Tree Sparrows, Song Sparrows, and a pair of Cardinal Grosbeaks, that were feeding in a field that was formerly the bed of a mill dam, now overgrown with weeds, and a tangle of alder and blackberry bushes. I had the bird under observation for one and a half hours, watching it feeding. It fed considerably on the ground, occasionally flying to trees which fringed the field, and picked for grubs under loose bark, pieces of which several inches in length would fall to the ground. It also picked at decayed apples left hanging on the trees. On December 17 and 25, the bird was still there, in company with the above-mentioned species. On December 31, after a rather severe snow-storm, the bird was not observed. It was a brilliant male, and, though apparently quite lively, did not utter a sound. There could be no mistaking the bird, which is very common here in summertime, and I had it in view several hours the three different times, as close as twenty feet.—G. HENRY MENGEL, *Reading, Pa.*

A Winter Towhee

It will perhaps be interesting to know that I have been feeding a Towhee at my

kitchen window all through the month of December. For the first week there were two; but for the last two weeks only one has been seen. I have a table just outside my kitchen window on which I place several kinds of seed every day. The Towhee prefers the hemp seed to any other, while the Chickadees take the sunflower seeds first. The bird is very tame, and will come to the table while the window is open, and myself not two feet away.—FRANK E. WOODWARD, *Wellesley Hills, Mass.*

A November Black-Throated Blue Warbler

At half-past eight o'clock this morning, when everything was covered with ice and slush after a night of storm, I saw a Black-throated Blue Warbler not ten feet from the window where I stood. It and a flock of English Sparrows were under a large forsythia bush, the Sparrow eating corn cracked by Cardinals, which I feed there daily. The Warbler flew close to the window, and myself and another member of the family watched it for some minutes as it searched the branches. It was a mature male, in fine plumage.

My latest record previous to this was October 12, 1906.—(MISS) ISABEL D. MARTIN, *Princeton, N. J.*, November 15, 1911.

Winter Robins I

It may be of some interest to know that the Robins are here, if, indeed, they have ever been away. Yesterday morning (January 3, 1912), the Robins were the unusual visitors in our proverbially old apple tree. The thermometer registered 3° above zero, and their frozen feast was, on this occasion, some apples that were still clinging to the limbs. The Jays and Cardinals held but a minor interest on this occasion. A few days before this date, a flock of Robins was actually seen (not heard) in a persimmon grove, apparently delighted with the fruit. For many years I have observed the coming and departing of Robins, but this is quite the

earliest I have ever seen them, although one supposed authority says that the Robin is with us all winter. At any rate, these birds in January are a very rare sight in this section of the state, especially for those who welcome and rejoice in the return of the Redbreast.—M. L. HULSE, *Carlville, Ill.*

Winter Robins II

The present cold spell seems to have produced an unusual visitation of Robins in this neighborhood. On January 6, I saw eight or more, and on January 7, at least ten in a garden about half a mile from town, the temperature each time being so low, and the wind so fierce, that we could not stop for a more accurate count. On the 7th, we saw two more about half a mile from the others, and on the 14th two more about two miles from either of the foregoing places. There was a Hermit Thrush with the larger flock on the 7th.

These are the first winter Robins I have seen here, the dates for former seasons being: Last November 21, 1909, first March 5, 1910; last October 31, 1910, first March 13, 1910. The present cold wave is the most severe of the three winters.—R. F. HAULENBEEK, *Princeton, N. J.*

Winter Robins III

It is such an unusual thing for Robins to be seen in this locality during the winter that the person announcing the first Robin of the year is looked upon as a sort of joker, and his announcement is regarded as questionable. In fact, close observation on my part during the past half-dozen years has failed to reveal to me any Robins in "the dead of winter." Reports have occasionally come to me of a single Robin having been seen in certain localities, and upon investigation it has been discovered that the locality would be quite favorable for the shelter of such birds, and very much the kind of place they would be likely to select at this time of year; but, in each case the person

reporting the discovery was not absolutely certain that the bird seen was a Robin.

This winter, however, has been an exception to the rule, and great numbers of Robins have been seen everywhere; notwithstanding the fact that the ground has been covered with from six to eight inches of snow, and the thermometer has registered as much as 28 degrees below zero.

On Christmas Day, which was rather mild, I was somewhat surprised to see a flock of forty-eight Robins, and attributed the cause of their presence to the fact that for some weeks the weather had been warm. But when, the next week, the snow came and the temperature went down to extreme cold, and the Robins were yet everywhere in evidence (on January 16, with the thermometer standing at 15 degrees below zero, I saw one flock of 32 and another of perhaps 50, or more, all in unprotected localities), I had to seek for a new cause.

The question of food was one that presented itself to me. Upon what were these birds feeding? I began to investigate, and soon came to a satisfactory conclusion.

Last summer this locality was blessed with a bumper crop of apples. There were more than could be gathered and disposed of, and, as a result, there are many bushels yet remaining upon the trees, and I found that upon these frozen apples the Robins were feasting, and I at once came to the conclusion that the abundance of this kind of food accounted for the presence of so many Robins at this season of the year.—W. H. WISMAN, *New Paris, Ohio.*

Winter Robins IV

Have the Robins been changing their habits, or is it force of circumstances that has made it necessary for them to seek new winter quarters?

On January 13—our coldest day of winter at that time (8 below at 7.30 A.M.)—I saw a flock of from 50 to 60. They were in a compact flock, and had apparently come from a clump of pines and other

trees along a small stream, where later I saw several birds scattered about; not feeding, but calling lustily, and all apparently in good condition.

From Washington county, at about the same time, a report came of a flock of 1,000 (an estimate, no doubt). Similar reports have been common from near-by districts. On February 11, I saw four.

From Mt. Vernon, Ohio (central), reports of very large flocks are even more common—of 500, one of 50, of sixes and dozens. Today I received a letter in which the writer states having seen a flock last week in which were "hundreds and hundreds."

Up to this year, I've never seen a Robin during January nor before February 22, and in Ohio, where I formerly lived, an occasional winter Robin was a big event.

How about other sections of the country? Have others similar reports to make? What might be a plausible explanation?

On February 11, I also saw great numbers of Horned Larks (about 200). Some were feeding on the ground that the wind had cleared of snow, others were chasing about in pairs, while many were soaring high in the air, singing just as I've heard them do at nesting season. If only their song was worthy of the sustained effort with which it is voiced!

Is this usual at this season of the year? No doubt these were all of the same kind, the Prairie Horned Lark.—V. A. DEBES, 900 Hill Ave., *Wilksburg, Pa.*

The Starling in New Jersey

The European Starling (*Sturnus vulgaris*) is becoming very common about Trenton and Lawrenceville. The farmers, and bird observers in general, have asked me to identify these birds many times in the past year or two. As nearly everyone interested in ornithology knows, the Starling was introduced into the United States in 1890, at New York, and for years thereafter the species remained about Central Park, several pairs each spring building nests under the eaves of the American Museum of Natural History.

I first noticed the Starling in the vicinity of Lawrenceville in the spring of 1909. Since then I have found several nests yearly, the birds becoming more and more plentiful each season. A note from field-book of May 2, 1909, reads: "Principal find of the day, European Starling. Nest with young in hole in small oak tree by side of creek beyond F.'s woods. Flicker's nest just above in same tree. The two species did not seem to be the best of neighbors. Some difficulty in identifying, I thinking at first the bird was a Purple Martin, but the yellow bill and mottled upper feathers argued conclusively against the Martin. Parent birds most persistent in feeding their young, and unusually suspicious of intruders."

Journal of May 13, 1909, reads: "Young in Starling's nest peeping out of hole, evidently nearly ready to take wing. Both parent birds near. Have often noticed the extreme shyness of these birds, they absolutely refusing to enter hole while I was within twenty feet of the tree. Often the old birds, coming home with food in their bills for the little ones, would deliberately drop the worm or grub, or eat it, rather than venture to the nest while I was near. Flicker has evidently deserted her nest above Starling's. Have not seen Flickers around in several days."

May 16: "Starlings still in nest. Seem unusually large for fledglings. Noted peculiar actions of Tree Swallows (dozen or more) which circled about stump containing both the Starling's and the Flicker's nests. Occasionally one or two of them would assail the Starlings in the air, attacking them from below instead of above, as the Kingbird does the Hawk. Swallows disappeared all of a sudden. Couldn't determine why the Swallows desired combat with the Starlings. Flicker again in her nest above the Starlings. Five nests within fifteen rods—those of the Starling, Flicker, Yellow Warbler, Phoebe and Song Sparrow. Red-winged Blackbird's nest with three eggs twenty rods further on."

May 25: "Starlings nesting again, this time in the hole which the Flickers occupied earlier."

I am certain the Starlings reared two broods in the same stump, first in one hole, then in the one above, hollowed out originally by the Flickers. I am also positive that the Starlings eventually drove away the Flickers.

Mr. Witmer Stone, of the Academy of Natural Sciences, Philadelphia, wrote me, in answer to my letter describing the Starlings and Flickers as nesting in the same tree: "I am much interested in your letter. We have a few Starlings breeding at several points in Philadelphia, and in one instance, at least, they have driven away nesting Flickers. There is a large flock established at Vineland, and they have reached Tuckerton, Salem and Delaware."

A few days ago, during one of our coldest mornings of the present winter, a large flock of Starlings was seen on the Lawrenceville School campus. They may be found in many places in this locality in the spring and summer, and I have run upon their nests in all kinds of trees.

Farmers hereabouts seem to be considerably concerned as to the economic value of the Starling, many believing the bird will ultimately become as great a pest as the English Sparrow. Judging from the bird's habit of routing out certain of our native species of songbirds, it would seem there were considerable warrant for the anxiety of the farmers with respect to *Sturnus vulgaris*.—WALTER FOX ALLEN.

Starlings in Princeton, N. J.

Since the fourth of January, large numbers of English Starlings have frequented the campus. This is the first time I have ever noticed this bird in this vicinity, although scattered individuals have been reported. The Starlings play about the buildings and most of the time have been busy eating the berries on the ivy. Altogether there are probably nearly two hundred birds. Their arrival in such

numbers here I believe was due to the intense cold of the first two weeks of the month, and since the moderation they have gradually disappeared.

I noticed also several Starlings at Chestnut Hill, Pa., on January 2, 1912, but have never seen such flocks in the vicinity of Philadelphia as have been here until the last few days.—A. F. HAGAR, *Princeton, N. J.*

The Starling in Illinois

On Thanksgiving day, November 30, 1911, I saw a Starling. It was at the home of my sister, Mrs. H. M. Palmer, at McLean, McLean Co., Ill., which is fifteen miles southwest of Bloomington.

It was feeding on bread crumbs placed on the bird tray attached to a tree, and about thirty feet from the house. I observed it carefully through glasses. I recognized it from the pictures I had seen, but especially from its Blackbird-like characteristics. It was feeding with the English Sparrows both on the the tray and on the ground. There was snow covering the ground. It would attack the Sparrows that came too close, and when it was in the trees the Sparrows attacked it. My sister said she had seen the strange bird three or four days before this, but did not recognize it. It did not reappear after the 30th.—FRANK W. ALDRICH, *Bloomington, Ill.*

The Starling in Philadelphia

I wish to record a few observations which I have made of the Starling. When I returned to the city on September 15, I noticed these birds in a tree in the back of my home. The section of the city in which I live is quite thickly built up, and it is very unusual to see anything but English Sparrows. Consequently, these birds attracted my attention whenever I had time for any observations.

At first there were but two of them. They seemed to be considerably bothered by the Sparrows, which never dared to attack them but kept continually nagging

at them. However, there must have been something about the neighborhood that was attractive to them, for they could be seen at almost any hour of the day in the immediate vicinity. On November 26, I noticed five birds. This, of course, is rather an unusual number, and I suppose there must have been others near-by, but they were not visible at that time. Three or four days later, I noticed eight of them. They remained here until the bitter cold, which set in about the fifth of this month. I have not seen them since that time, and presume that they have gone further south.

I could not locate the nest of the birds, but it was the impression of the other members of my family and myself that they nested on top of a tower of the house in the rear of the one in which I live. The birds seldom lighted on the ground, and in fact, stayed in the high branches of the trees or near the top of the house at all times. I am sorry that I cannot give you any exact data as to their food *et al*, but I am somewhat of a novice at ornithology, and probably with experience my powers of observation in this particular branch of study will improve. I thought, however, that it might be of interest to you to know of the presence of these birds in a closely built up portion of the city at this season of the year.—CHAS. ALISON SCULLY, *Philadelphia, Pa.*

The Starling in New Hampshire

A flock of strange birds was noticed, in December, 1911, flying about an old orchard. They seemed especially fond of the frozen apples found on the trees. The refuse from a walnut-crack was thrown out, and the whole flock came to eat. An examination of a specimen proved it to be a bird entirely new to this vicinity. By the help of Chapman's Handbook of Birds of Eastern North America, we thought it must be the English Starling and, by sending the feathers to Mr. Chapman, we were assured that we really had the Starling with us. The flock of Starlings consists of between twenty and

thirty birds, and has attracted no little interest. We hope they have come to stay, and shall watch for them as warm weather appears. Several people have spoken of a strange flock of dark birds, seen late in the fall, after Blackbirds were supposed to have left us, but until December no one noticed them particularly. After once recognizing them, their metallic purplish and greenish plumage, with every feather tipped with cream-buff, makes a bird of great beauty, and one easily identified.

It has been by far the coldest winter for years here, the thermometer registering often thirty degrees below zero.—REST H. METCALF, *Hinsdale, N. H.*

Bird Notes from South Norwalk, Conn.

The past winter was notable because of the long-continued cold (from January 3, to February 17, heavy ice covering the feeding-places of Ducks), the absence of rare winter birds, and instances of summer birds staying into the winter.

Mr. George Ells watched the tarrying of a Yellow-breasted Chat, which he showed to me on December 24, and that afternoon he saw it again, together with a Catbird, and Mr. James Hall saw the Chat on January 1, after which it was not seen again.

A friend told me of a Brown Thrasher that he had seen off-and-on up to January 17, and on February 11 he guided me and another friend to a cat-brier thicket in a swamp, where he showed us the Thrasher, and I saw it again on February 22. It lived near an open spring, on an abundance of frozen apples and the refuse heaps from two houses. The bird was in excellent plumage and very shy, and on both visits dived into the thicket before I could secure a photograph.

In some places the Horned Larks were scarce, but at the mouth of the Housatonic river I found a flock of more than one hundred and fifty living on the truck gardens, and among them was one Snow Bunting, the only one seen or heard of.

Fortunately there was little snow, and

the weed seeds and grasses remained above the snow; else the loss of bird-life would have been appalling. One Bluebird was found frozen beside a stone fence, and five Meadowlarks were found frozen under a corn-shock at Bethel; and Deputy Warden Fauble, of Stamford, found five dead Quail, from a late brood, it would seem, from their small size.

Not a Shrike or Crossbill has been reported from this section, and but one report of the Red-polls and Siskins, late in February.

Black Ducks suffered most, as the ice covered their feeding-places, and they sat around on the ice and starved and froze to death. I saw and picked up thirty-eight that had died, and the condition of hundreds was critical when the ice broke and laid bare their feeding-grounds. At the mouth of the Housatonic river, the Black Ducks and Scaups gathered in immense numbers and, by wearing a white suit and walking among the ice-floes, I was able to get within a few feet of them; showing plainly that, but for the protection given them by the closed season, it would have been possible to have killed large numbers of them at a time when they were hardly able to secure food enough to keep alive.—WILBUR F. SMITH, *South Norwalk, Conn.*

Bird Banding

The Bird-Banding Committee of the Linnæan Society of New York wishes to insert a paragraph here, for the purpose of assuring the members of the American Bird-Banding Association, and others, that, as the nesting season approaches, those in charge of the affairs of the Association are making preparations for an active season, and a wide distribution of bands among those who will be good enough to use them. About seven thousand five hundred bands of various sizes are now in process of manufacture, and members of the A. B. A. will be notified as soon as these are ready for distribution.—HOWARD H. CLEAVES, *Secy.-Treas., Public Museum, New Brighton, N. Y.*

Book News and Reviews

THE MIGRATORY MOVEMENTS OF BIRDS IN RELATION TO THE WEATHER. By WELLS W. COOKE. From Yearbook of Department of Agriculture, for 1910, pp. 379-390, 1 map.

No one is better fitted than Professor Cooke to discuss this ever-interesting subject, and what he has to say in this paper may be taken as adequately expressing our present knowledge. His "conclusions" are as follows:

"The foregoing facts show conclusively that weather conditions are not the cause of the migration of birds, but that the weather, by influencing the food-supply, is the chief factor which determines the average date of arrival at the breeding grounds. Migration is undertaken in response to physiological changes in birds, and the date of starting, in the case of most species, bears no relation whatever to the local weather conditions in the winter home. The weather encountered en route influences migration in a subordinate way, retarding or accelerating the birds' advance by only a few days, and having slight relation to the date of arrival at the nesting-site.

"Local weather conditions on the day of arrival at any given locality are minor factors in determining the appearance of a species at that place and time. The major factors in the problem are the weather conditions far to the southward, where the night's flight began, and the relation which that place and time bear to the average position of the bird under normal weather conditions. Many, if not most, instances of arrivals of birds under adverse weather conditions are probably explainable by the supposition that the flight was begun under favorable auspices and that late in the night the weather changed. Spring migration usually occurs with a rising temperature and the movements of autumn with a falling temperature. In each case the change seems to be a more potent factor than the absolute degree of cold.

"The direction and force of the wind—except as they are occasionally intimately connected with sudden and extreme variations in temperature—seem to have only a slight influence on migration.

"Another conclusion, equally apparent, is that neither time of migration, the route, nor the speed of one species, can be deduced from records of other species, even though closely related; in other words, each species, and even each group of individuals of a species, is a law unto itself."—F. M. C.

A BIOLOGICAL SURVEY OF THE SAND DUNE REGION ON THE SOUTH SHORE OF SAGINAW BAY, MICHIGAN. Prepared under the direction of ALEXANDER G. RUTHVEN, Chief Field Naturalist, Michigan Geological and Biological Survey. Publication 4, Biological Series 2; Lansing, Mich. 8vo., 347 pages, 19 plates, 1 map.

This volume records the results of what was evidently a biological survey in the best sense of the term. Taking a well-defined area where primitive conditions existed, Mr. Ruthven secured the coöperation of a corps of specialists, and we have here, consequently, the observations and conclusions of men who not only were especially qualified for the particular work in hand, but who had the inestimable advantage of reporting on material which they had collected themselves. Thus G. H. Coons writes on the 'Ecological Relations of the Flora,' C. K. Dodge, gives a 'Catalogue of Plants,' H. Burrington Baker reports on the Mollusca, A. Franklin Shull on 'Thysanoptera and Orthoptera,' Charles A. Shull and M. A. Carriker, Jr. on 'Mallophaga,' A. L. Leathers on 'Fish,' Alexander G. Ruthven on 'Amphibians and Reptiles' as well as on the general biological problems of the survey; N. A. Wood on 'Mammals' and the same author with Frederick Gaige gives a well-annotated list of the 128 species of the birds observed. The whole undertaking embodies exactly the kind of

work which we have long hoped might be done on Gardiner's Island, a locality which offers unique opportunities for ecological investigation.—F. M. C.

A CONTRIBUTION TO THE ORNITHOLOGY OF THE BAHAMA ISLANDS. By W. E. CLYDE TODD and W. W. WORTHINGTON. *Annals of the Carnegie Museum*, VIII., Nos. 3-4, 1911, pp. 388-464, 1 map.

From December 24, 1908, to May 13, 1909, Mr. Worthington collected birds on New Providence, Great Inagua, Acklin, Watlings, Andros, and Abaco Islands, in the interests of the Carnegie Museum. In this paper he presents a 'Narrative of the Expedition' and 'Field Notes' on the species observed, while Mr. Todd contributes the 'Introduction' and 'Critical Notes' on the specimens; the whole forming an important contribution to our more definite knowledge of distribution and relations of the birds of this interesting group of islands.—F. M. C.

THE AMERICAN BIRD-HOUSE JOURNAL FOR 1912. By J. WARREN JACOBS, Waynesburg, Pa.

Mr. Jacobs proposes to continue his important contributions to the natural history of the Purple Martin, and ways and means of promoting its increase through the erection of nesting-houses, under the above heading. The present publication contains some fifty pages, many illustrations, and much pertinent matter in relation to the habits of Martins, based on the experiences of Mr. Jacobs and his numerous correspondents.—F. M. C.

The Ornithological Magazines

THE CONDOR.—Of the five general articles in the January number of 'The Condor,' the first, by Bowles and Howell, on 'The Shore Birds of Santa Barbara' merits special mention. Notes are given on twenty-nine species, attention is called to the economic value of the Plovers, Phalaropes and smaller Sandpipers, and to the desirability of removing them from the game list. The paper is

illustrated by one of Dawson's photographs, showing Long-billed Dowitchers feeding, and three photographs of Phalaropes by Bowles.

Ray's account of a trip 'Through Tahoean Mountains' in 1909, and Swarth's 'Visit to Nootka Sound' in 1910, both illustrated, are somewhat different from ordinary 'local lists,' and much more interesting to the general reader. The Tahoe trip occupied about two weeks, and during this time observations were reported on ten species of birds, five of which were found nesting. Nootka Sound, on Vancouver Island, has many historical associations, but its chief interest to the ornithologist lies in the fact that it is the type locality, or place where the original specimens were collected, of the Rufous Hummingbird, Red-breasted Sapsucker, Blue-fronted Jay, and Varied Thrush. Swarth succeeded in securing examples of all except the Sapsucker. The paper closes with a nominal list of forty-nine species observed.

Saunders' 'Birds of Southwestern Montana,' containing notes on one hundred and fifty species found in the most thickly settled part of the state, is a welcome contribution, as little or nothing has heretofore been published on the avifauna of this region. Chester Lamb's 'Birds of a Mohave Desert Oasis' is likewise a list of more than ordinary interest, from the fact that it comprises twelve months' observation, from August 1, 1910, to August 1, 1911, of the birds at a desert water-hole, nine miles east of Daggett, California. Of the one hundred and thirty-three species observed at this apparently unpromising locality, forty-two were water-birds or shore-birds.

Attention is called to the appointment of F. S. Daggett as Director of the new Museum of History, Science and Art, in Los Angeles. Mr. Daggett's personal collection of 8,000 birds, 3,000 species of Coleoptera, thirty-six large drawers of butterflies, and his ornithological library of 1,800 volumes, and about as many pamphlets, will be deposited in the Museum.—T. S. P.

Bird-Lore

A Bi-monthly Magazine
Devoted to the Study and Protection of Birds
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN
Contributing Editor, MABEL OSGOOD WRIGHT
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Bird-Lore's Motto:

A Bird in the Bush Is Worth Two in the Hand

THE European Starling seems to be increasing its range at an unprecedented pace. Under date of January 11, 1912, B. B. Semmes writes to 'Forest and Stream' (Jan. 20, 1912, p. 83) of the appearance of "many hundreds" of these birds at Newport News, Virginia, whereas they had not been reported in numbers before much south of Philadelphia; and in this issue of BIRD-LORE we publish records of their occurrence as far west as Illinois, and as far north as Hinsdale, New Hampshire. The presence of the birds south of their previously known limits during the winter is far less surprising than their appearance at this season, with a temperature of -30° , some fifty miles north of the area in which they have heretofore been regularly observed. The facts attending this New Hampshire record clearly indicate the Starling's hardiness and ability to extend its territory under conditions which would daunt even an English Sparrow. Assuredly if any steps are to be taken by state or Federal government to prevent the further spread of this species, they should not be long delayed.

While the bird's economic status in this country has not yet been definitely established, many reports have shown that it molests native species, and, in regions when it is abundant, the sight of a flock of 'Blackbirds' in March is now robbed of all its charm and significance as a welcome and undoubted sign of the return of spring.

We have lately also had an experience

with the English Sparrows' power to mar one's associations with native birds. Returning recently to a Florida town where the Mockingbirds' March music was a cherished memory, imagine the feelings with which we discovered that the metallic, incessant chatter of the lately arrived, but already countless, English Sparrows was the dominant bird-note of the place. Under the circumstances, one could no more enjoy the rapturous melody of the Mockingbirds than one can enjoy a symphony concert with some one talking in the next row!

NUMEROUS correspondents have asked us to explain the presence of Robins, during the past winter in unusual numbers north of their regular winter range, and their queries are answered by some of the contributors to this issue of BIRD-LORE. With a species of somewhat irregular migration habits, like the Robin, favorable weather and a tempting food-supply often induce many individuals to linger after their migration period. Later, the temperature and snow may fall, but as long as food is available the birds remain.

This explanation is less applicable to birds like the Baltimore Oriole, which leave us long before they are forced to do so by inclement weather or lack of food, and late individuals of such species are doubtless birds which for one reason or another have been prevented from journeying southward with others of their kind and, under exceptionably favorable climatic conditions, have survived long after their species has left the United States for the tropics.

To a lesser extent this may be true of late Warbler records such as that, for example, of the Black-throated Blue Warbler, published on an earlier page of this number, but the surprising record of the Prothonotary Warbler in Connecticut in November, which precedes it, defies explanation. Not only is the species of merely casual occurrence on the Atlantic Coast north of Virginia, but the latest previous record for the United States appears to be 'Florida Keys, September 25.'

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, at 53 Arlington Avenue, Providence, R. I.

We may shut our eyes but we cannot help knowing
That skies are clear and grass is growing,
The breeze comes whispering in our ear
That dandelions are blossoming near,
That maize has sprouted, that streams are flowing,
That the river is bluer than the sky,
That the robin is plastering his house hard by.

—JAMES RUSSELL LOWELL.

ARBOR AND BIRD DAY IN THE HOME

How many of our Audubon Societies regularly take a hand in preparations for the proper observance of Arbor and Bird Day, either in the home or in the school? May not this day be celebrated at home as well as at school, and by fathers and mothers as well as by children and teachers? Why, indeed, should it not be made the most attractive holiday throughout the seasons for both old and young?

My first recollection of Arbor Day dates back twenty-five years or more, to a time when planting trees and protecting birds were matters which were just beginning to receive some attention. Arbor Day met with instant approval in at least one country preparatory school, and the story of its first celebration there doubtless duplicates that of many similar celebrations elsewhere.

Both principal and pupils brought from the neighboring woods small trees, and worked together, setting them out on the hilly campus. The day was cloudy but exhilarating and the simple exercises, which were held out-of-doors at the time of the tree-planting, took on a new meaning, with the smell of spicy spring breeze and freshly dug earth in the nostrils. It was not the exercises, nor even the tree-planting which counted so much as the fact that all who shared in the events of that happy day took in the *spirit of spring*, the joy and gladness of *living* and *growing*. Here was the true ring to Arbor Day.

Elaborate Arbor and Bird Day programmes are now arranged for our schools and much is being written of general interest concerning the conservation of the trees; but how little has yet been done to make Arbor and Bird Day a home-festival of spring!

Many a city home would be gladdened if its members brought in from the outskirts only a few basketfuls of new earth, a fern or growing shoot to freshen the monotony of the back yard.

There are numberless seeds which are scattered by the trees in places where they are strangled for want of room, and these starvelings might be taken up, without injuring either woodland or roadside.

How many a country home would be improved and made the richer, if one day a year was set aside for tree-planting or transplanting, for touching hands with spring at some spot about the grounds!

It would be a glorious thing if each child in all this land might plant at least one tree during his lifetime, on his home grounds, as well as on public school land.

Arbor Day is a good time to set about putting up a birds' drinking-fountain on the home lawn, and to see that sunflower seeds and other weedy tid-bits for the birds are planted in odd corners of the garden. And why should fences between our garden and our neighbor's run sharp lines of division? The birds, who fly over all obstructions, know no such artificial bounds to freedom. Let us set our trees in our home grounds with reference to the land adjoining, and have a community of interests with our neighbors, in the soil, if nowhere else. Of all days, Arbor and Bird Day ought to bring men and birds and trees into a fellowship that outlasts spring and summer, abiding through autumn days and the chill winter.

Our Audubon Societies can do a great deal for the homes of this country as well as for its schools. It is not preaching so much as teaching that is needed; not precept, so much as example. To observe Arbor and Bird Day fitly in our own homes is better than making many speeches or writing exhortations. Perhaps a neighbor may catch a glimpse of our simple ceremonies. We might possibly invite him to share in them, and to help us bear the message of spring to others, through school grounds, town and city streets and parks.

Let us take this beautiful day for our own, for our home, our school, our village or city, and make it not only a day of tree-planting and bird-lore, but also a day of much joy and that gladness which only spring can give.—A. H. W.

There's a lesson of strength and beauty

That grows as the days go by,

In the trees the children are planting

Under the springtime sky.

May the lives of those who plant them

Grow strong and fair, to be

A blessing to all about them;

That's the lesson of the tree.

—EBEN E. REXFORD, in "The Wisconsin Agriculturist."

Summer or winter, day or night,

The woods are an ever new delight;

They give us peace, and they make us strong,

Such wonderful balms to them belong.

—RICHARD HENRY STODDARD.

FOR TEACHERS AND PUPILS

Exercise II. Spring Travelers

Correlated Studies: Geography, Map-Making and Clay-Modeling

It is rather difficult to think of studying geography, the way it ought to be studied, according to the actual ups and downs of the earth's surface, instead of on a flat map or polished globe. Maps and globes are useful; without them we could hardly gain a clear idea, perhaps, of the relation of all the land and water areas which make up the earth's surface.

Still, we can never see the world as it really is, unless we try to look at it, as the bird does, *from above*.

Beginning with that part of the world with which we are most familiar, let us take a large lump of modeling clay, and out of part of it first make a perfectly flat surface. After tracing the entire coast-line of North America on this surface, we will next mold and place upon it three great mountain-ranges—the Sierras and Rockies in the West, and the Alleghany in the East, dotting in, with smaller lumps of clay, the White and Green Mountains and the Adirondacks and Catskills. Lastly, we will scoop out the Great Lakes, the St. Lawrence, Mississippi, Ohio, Missouri, and Hudson Rivers, and also the Gulfs of Mexico and California and Hudson Bay.

Without attempting in this lesson, to place the mountains, lakes and rivers of Mexico, or of Central and British America, we may complete this rough model by outlining the principal islands from the West Indies to Newfoundland on the Atlantic coast, and from Guadalupe to the Aleutian Islands on the Pacific.

So far, we have only succeeded in finding some of the most striking *land and water differences* of the earth's surface as they appear in North America.

Remembering what we have already learned about the weather and temperature, let us next try to think of the *climates*, that is, the *heat and cold differences*, which occur over this vast surface of land and water. Turning to any geography, we find lines running from east to west across the globe, called lines of latitude. These lines help to show us distances on the earth's surface, from a middle line, called the equator, to each of the poles. By means of these lines, we may quickly locate some of the principal heat and cold differences, or climates.

Down around the equator, and for some distance north and south of it, we learn that it is very hot, because more of the sun's heat strikes this part of the earth than any other. From 0° (the equator) to 15°, let us mark our map, "very hot" and from 15° to 25°, "hot." All of this hot region we may describe as torrid, and call it tropical in climate.

From 25° to 35°, we will say it is "warm;" from 35° to 45°, "medium;" from 45° to 55°, "cool," and all of this region we may describe as temperate.

Above 50° , it is growing cold, and we are also getting very far away from the hot equator, so let us put down from 30° to 60° , "cold," and from 60° to the North Pole, "very cold," describing this region as arctic, or boreal, in climate. But we must not get the idea that all the hot and cold places on the earth are either in the tropics or about the poles, for that is not true. We shall understand this a little better if we picture *differences in altitude and depth*, that is the height and depth of the earth's surface above and below the level of the sea. Now the higher any part of the earth is above the sea-level in the atmosphere or below it in the water, the colder it will be. Let us fix in our minds the highest mountain-peaks in the United States, where the climate is usually temperate or medium, and discover, if possible, how far north one would have to travel to find a climate as cold as that which encircles these lofty points.*

When we stop to think of this matter, we know that in traveling from the base of a mountain far up to its summit, we go from a warm, or moderately warm, temperature to one much colder, just as truly as in going from the equator toward either pole.

In one case, we reach the cold region by going up as far as the land will carry us above the level of the sea: in the other, we get as far away from the hot part of the earth's surface as we can by going to the cold part, north or south.

If we look at the clay map now, and think about *where* it is *cold* and *where* it is *warm*, we will see that all the cold places cannot be around the pole, because there are so many very high mountain peaks, as far south even, as New Mexico, where it must also be cold. Just how to make our map show us where to look for heat and cold is rather more difficult than to make it show where there is land and water; but by sprinkling talcum powder over the clay, we can show the coldest places, not only those that are high above the level of the sea, but also those that are far from the equator.

The reasons why it is hot or cold, high or low, or why there is land or water at any one place, need not concern us here, but they make a long and interesting story.

The birds cannot think about these things, neither can the trees nor the grass and plants: but they can all respond to heat and cold, and the birds can see high and low places as well as the difference between land and water, while plants and trees can go down *below* the earth, as well as *up* into the air above it. Each tiny seed that is dropped into the soil, makes a wonderful journey from the dark depths through which our eyes cannot see up into the air and sunshine, just as truly as the bird, which travels from the hot equator to the far cold north, or the mountain-climber, who leaves the grassy plains

*See article on page 97 of this issue in which it is stated [that in climbing up three miles in altitude on Mt. Orizaba (Mexico), as great changes in vegetation and animal life are found as there would be in going north three thousand miles in latitude from the base of this lofty elevation in the tropics.

and pushes his way steadily up to the treeless and grassless, snow-covered peak where the air is cold and thin.

Learning the heights of mountain-peaks or the different depths of the salt ocean and fresh-water lakes and bays will mean much more to us, if we stop to think of the many kinds of plants and animals which make their homes all over the earth, at different heights and depths of the land and water, and in different climates.

Looking down now upon the earth, as the flying bird does, we see great plains and mountains; vast forests and long stretches of desert where neither trees nor grass grow; lakes, large and small; rivers with fertile valleys, and crooked coast-lines, here rocky and boldly jutting out into the ocean, while yonder, gently sloping down to the water's edge in shining, sandy beaches.

Should we try to look down through the ocean or great inland bodies of water, we should find a water-world more strange and quite as wonderful as this land-world, one where many curious animals and plants live at different depths. Among these water-folk are some great travelers. While seeds are sprouting and leaves are unfolding, while bears and other hibernating animals are waking up from their long sleep, and migrating birds are starting on their long journeys, the leaping salmon leave the sea and, entering some river's mouth in schools, swim steadily against the current toward its head. Around eddies and rapids these fishes go, surmounting falls and artificial dams by great leaps, until at last, thin and exhausted, they reach the spot which instinct has taught them to seek, where they may safely deposit their eggs.

No one has yet succeeded in fully explaining why each springtime sees so many finny, furred, and feathered travelers on their perilous paths.

Different kinds of land and water, different degrees of heat and cold, different heights and depths, along with many other things doubtless, play a part in this mystery.

Looking over our map again, it might help us to trace some of the trails over which migrating birds travel, for, by following these airy highways, we shall be getting a bird's-eye view of all North America.

Starting from the tropics, in the latitude of the Isthmus of Panama, let us see how many ways there are of getting from South America to North America.

There is certainly very little land and a great deal of water to choose between, but since birds fly whither they please, the one really important matter to take into account is *food*.

You and I would need much extra clothing for a journey from the tropics to the Arctic Circle, but the birds' chief concern is for food. The suits of feathers which they wear protect them from the cold as well as from the heat. A very high wind or a heavy storm might interfere with their movements, but in any ordinary weather, the birds have no concern for the protection of their bodies.

Let us draw lines on our map or lay colored threads along the different routes we find to travel, numbering and naming each one to help us remember them.

First, we will start by land, because that seems safer, and travel along the western lowlands of Mexico up to Arizona and California, keeping along the Pacific Coast away from the great mountains and deserts. It seems to be an easy route to fly over, but we do not find so many kinds of birds traveling this way as might be expected. Calling this the "Pacific Coast Route," let us start again a little more to the eastward, and enter the United States at New Mexico, pushing north to the Great Plains. There is an almost limitless stretch of land here, but much of it is dry and treeless. We see at once that many birds will never come this way, because they could not find proper food, water or nesting-sites. Perhaps we may name this little-traveled route, the "Route of the Plains, or the Interior." These western trails are most convenient for those birds which winter in Mexico but are somewhat out of the way for those which come north from South America. We must make a fresh start, if we expect to keep company with the great mass of northward-bound birds.

It looks, on the map, as though we might get across from Yucatan to Cuba and then to Florida without much exertion or danger but for some unknown reason the birds do not like this way. So they cross anywhere from Vera Cruz to Yucatan, and fly *northeast* over the great Gulf of Mexico, a sea-flight of 500 to 700 miles, according to the point of departure.

We may leave the coast with them at night flying on and on through the darkness, until we come to land once more somewhere between Louisiana and northwestern Florida. There our feathered companions, many of whom are among the smallest and weakest birds, will separate, some to keep on through the popular "Mississippi Valley Route" to the far north, others to continue up the Atlantic coast, and others to seek the valley of the Missouri as far as the western plains.

The "Island Route" is frequented by certain birds which spend the winter in the West Indies and by some others who leave South America and fly 500 miles to Jamaica, then 90 miles across to Cuba, and from there 150 miles to southern Florida. The Bobolinks, with a few companions, cut out Jamaica, making a direct flight of 700 miles from South America to Cuba, and so on to Florida. We will call this the "Bobolink Route" from the jaunty travelers who go over it. There are birds of stronger wing and more endurance than even the Bobolink, who like to travel by sea better than by land. Wild Ducks and many shore-birds follow up the Atlantic coast, well out to sea, except as they stop to feed and rest in secluded places along the shore.

One famous traveler, the Golden Plover, goes north by land through the great plains of the West, but comes back mostly by water, to its winter home in South America. No other bird is known that takes so long a sea-flight without stopping. It is 2,500 miles from Nova Scotia to northeastern South Amer-

ica, but this Plover, in good weather, is believed to cover that immense distance in a single flight.

Our next lesson will describe where these spring travelers go to nest, and some of the things they must see on their way thither. Do not forget that when they have reached the United States many of them still have a long journey ahead. Wherever they go, there is much for us to learn about the places that they visit.—A. H. W.

SUGGESTIONS

If clay is not at hand, let the scholars draw outline maps and color them to show the points mentioned above.

Geo. F. Cram, Chicago, publishes an orographical map, on which are marked altitudes below 500 feet, from 500 to 2,000 feet, 2,000 to 5,000 feet, 5,000 to 10,000 feet, over 10,000 feet; also the northern and Mississippi watersheds and the Atlantic, Gulf and Rocky Mountain slopes.

Learn the heights of the loftiest mountain-peaks in the United States, and try to find out how far one would have to travel north in order to reach as cold a climate and the same vegetation and animal life as are found upon them.

Which way do the rivers run in the western United States? Which way do those in the eastern United States run?

How is the "Route of the Plains, or the Interior" hemmed in? What animals have the habit of migration? Of hibernation? What is the difference between migration, emigration, and immigration? Is the English Sparrow in this country a migrant, emigrant, or immigrant?

How do birds' feathers protect them from heat and cold?

For an Arbor and Bird Day programme see BIRD-LORE, Vol. XIII, No. 2, pp. 108-115. Consult the works of David Starr Jordan. Read his story of the travels of the salmon.

FROM YOUNG OBSERVERS

Wintering of the Robin in the Northern United States

W. D. Rice, a teacher, writes from Vanderbilt, Michigan: "Two of my pupils saw two Robins this morning [February 16] near their home. We will watch and report again. We think it is pretty early for Robins in northern Michigan."

[The following unusual records of the appearance of the Robin at various points in the northern United States suggest the probability of the wintering of certain individuals of this species during an exceptionally cold season, where food and water and sufficient shelter have been available. At Ferrycliff Farm, Bristol Neck, Rhode Island, a flock of over 200 Robins is reported to be spending the winter, feeding largely on weed-seed and waste grain. This flock has been fed by the caretaker of the estate when the ground was covered with snow, but no artificial shelter has been furnished the birds. A thick grove of junipers, with a protected glen where springs of water remain open, seems to have attracted this large flock of Robins. The owner of the estate, Dr. H. M. Howe, has for many years seen that feathered visitors were fed and protected within his premises.

On the morning of February 12, while driving to the railroad station at Burke,

Vermont, Dr. H. E. Walter saw a single Robin. The bird flew directly across the road. It seemed in good condition, although the temperature during that week fell to 18° and 30° below zero at night.—A. H. W.]

Our Winter Visitors

Our school-house is near the woods, and birds—Chickadees, Tufted Titmice, Juncos, Nuthatches and Blue Jays—from there visit us. On a little elm tree by the side of the school, and on an apple tree in front, we put suet for our visitors. The crows come unasked sometimes and take away the suet. We also put corn on a cherry tree on the other side of the school for the Blue Jays. In a cigar-box, on the window-sill, we put corn, cracked nuts and chicken-food, and we were very much surprised to see how quickly it went; but one day we saw a gray squirrel up at the box and he jumped into the box, and then we knew what had become of the nuts and food. One of us took some pictures of the squirrel and birds. We are so near the birds here that we see them plainly and can make out the colors.—Helen C. Hicks (aged 8), *Millington, N. J.*

Our Winter Friends

Our school has a woods right back of it. We have put out suet, corn and nuts. The Blue Jay likes to eat the corn on the cobs that we hung up in the



THE COMPETITORS IN A BIRD-BOX CONTEST

"We live in the semi-arid West, and there is a lack of birds here and a lack of trees. To encourage more birds and less slaughter, a bird-box contest was started in which a small prize was given to the pupil in the school who made the best bird-box. Over 100 were entered, and this photograph shows the pupils with the boxes in their hands."—WILSON TOUT, *North Platte, Neb.*

tree. The White-breasted Nuthatch, the Tufted Titmouse and the Chickadee like the nuts, suet and the corn.

On the window-sill there is fastened a cigar-box that has nuts and corn in it, and we can stand a foot away from the box and watch the different birds come. They sit on the edge of the box, and hold the shells in their claws and pick the meat out. The Chickadees are the tamest.

All the children of our school belong to the Audubon Society. We put out whole nuts for the squirrels who come every day.—Marion B. Cornish (aged 12), *Stirling, N. J.*

These interesting records come from two scholars who attend the same school. If they will send pictures of the squirrels and birds, which can be reproduced, BIRD-LORE will be glad to publish them.—A. H. W.]

A Winter Record from Minnesota

I feed the birds in winter, and the following species come to feed regularly; Chickadee, White-breasted Nuthatch, Blue Jay, and Downy Woodpecker. The main thing, however, is the "taming" of the Chickadees, as I call it. From January 7 to January 20 the Chickadees ate from my hand every day and seldom less than a dozen times a day. They would alight on my head and then into my hand, or directly come to my hand. One Chickadee became so tame that whenever it saw me, whether I was in the front yard, back yard or anywhere near the house, it would come down and look for something to eat. Many persons witnessed it, and thought it the cutest thing they had even seen in bird-life. Some said they had read of it but never believed it until they saw my birds do it. I was after the photographer several times to take the picture, but he would not come out in the cold to do it and always looked for a warm day. Since the weather has grown warmer the birds have ceased to eat from my hand, much to my disappointment.—Harry B. Logan, Jr. (aged 16), *Royalton, Minn.*

[This lad lives in a town where nature-study is not carried on in the schools, where only a few people care either to study or to protect the native birds, and where gunners shoot birds by the wholesale for sport. Aside from the great pleasure he is deriving by feeding and attracting bird-neighbors, he is doing a work of which any public-spirited citizen should be proud. Note the observation of the feeding-habits of the Chickadee.—A. H. W.]

Can the Starling Resist the Cold as Well as the Robin?

E. A. Burlingame, of Providence, R. I., reports that about the middle of February he picked up a dead Starling at Bristol Highland, R. I., on a porch, where it had flown, apparently for shelter. The weather had been extremely cold for this locality the week preceding. It is possible that this Starling was one of the brood hatched out last spring at South Swansea, Mass., which is only five or six miles distant from Bristol Highland. So far as known, this is the second record of the Starling in Rhode Island.—A. H. W.



DOWNY (figs. 1 and 2) and HAIRY WOODPECKERS (fig. 3.)

Order—PICI

Family—PICIDÆ

Genus—DRYOBATES

Species—PUBESCENS (DOWNY)

Species—VILLOsus (HAIRY)

National Association of Audubon Societies

Educational Leaflet, No. 52

THE HAIRY AND DOWNY WOODPECKERS

By ALICE HALL WALTER

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 55

Distribution Of the three hundred and fifty kinds of Woodpeckers which occur throughout the world, with the exception of Madagascar and the region of Australia, twenty-four species and thirty-two subspecies are found in North America, besides two species which are accidental. The genus *Dryobates*, to which the Hairy and Downy Woodpeckers belong, is much subdivided, and, for this reason, the geographical distribution of the species and subspecies comprising it is a most interesting subject of study. One may travel from Panama and the Gulf of Mexico all through the wooded parts of North America, almost to the tree limit, and be sure of finding some form of the Hairy Woodpecker, while its smaller relative, the Downy, is as widely distributed within the boundaries of the temperate zone. Although the Hairy is the less common of the two, both are permanent residents and may be seen at all seasons of the year.

Description Diagnostic points to remember about the Hairy and Downy Woodpeckers are: (1), that they differ in size but are almost identical in plumage; (2), that the outer tail-feathers of the Hairy are *pure white*, while those of the Downy are white, *barred with black*; (3), that the adult males have a bright scarlet nape-patch, which is lacking in the females, while immature birds of either sex have the crown more or less spotted with red or yellow; (4), that the difference in the size of the bill is an excellent field-mark; and (5), that the notes and even the "drumming" of the two may be distinguished with practice.

Notes The trained ear finds little difficulty in detecting the presence of the unobtrusive Downy, as it works about from tree to tree, calling *peek*, or tap-tapping along the bark with expert bill. When it flies from place to place, the ordinary note is usually quickly reiterated. It is not only softer in quality, but also longer and steadier than the rattle of the Hairy, and is a fine example of an unbroken diminuendo.

The "drumming" notes, or roll-calls, of all the Woodpeckers are noteworthy. In spring, the ear is greeted with these reverberating sounds, which tell that the season of courtship and mating is at hand. A dead limb furnishes the drum, and the powerful beak of the player, the stick, unless chance puts in the way of the performer a tin roof, lightning-rod, telegraph-pole, or some equally attractive metallic instrument, on any one of which the Flicker drums with apparent satisfaction.

Hearing John Burroughs has recorded the instance of a Downy Woodpecker which drummed in different keys, by tapping alternately in two places, an inch or so apart on the same branch. This example of the possible acuteness of the sense of hearing in the Woodpeckers is more

striking, but no less remarkable, than the quickness with which they detect the sounds, or vibrations, made by insects boring under the bark of trees; or, more mysterious yet, the way in which they discover colonies of dormant wood-gnawing ants. It is possible that the sense of touch as well as of hearing may aid in their search for grubs, but no observer seems as yet to have determined the truth of this suggestion.

Much has been written and pictured about the tools which the **Tools** Woodpeckers use in their beneficial routine of food-getting. Few other families of birds indeed have so many specialized structures.

In the first place, the feet of Woodpeckers are different from those of most of our birds, in that the toes, which are four in number, are placed two in front and two behind, with the exception of the small group of three-toed Woodpeckers. Such feet serve to *clamp* the bird to the tree.

Additional support is furnished by the stiff, sharply pointed tail-feathers, that act as a *brace* when the bird delivers heavy blows with its beak. Effective as this tool is for the work of *hammer*, *wedge*, *drill* and *pick-axe*, it could not obtain the deeply hidden grubs known as "borers," from their tortuous, tunneled grooves, without the aid of the long, slender, extensile tongue. In the case of the Hairy and Downy, as well as some others of the family, this remarkable tool is provided with barbs, converting it into a spear, which may be hurled one inch, two inches or even more, beyond the tip of the beak. The correlation between food and tongue in all Woodpeckers is most striking.

While searching for food, both the Hairy and the Downy sound the bark by tapping lightly. The instant a grub is detected, however, they stop in their tracks and begin hammering in earnest. If the grub is directly under the spot chosen for drilling, and the bark is not too tough, a perforation straight in suffices to reach the prey. The operation of making the circular hole is rapid and strenuous, and the grub seldom has time to make its escape, especially in live trees, where it is often not far under the surface of the bark.

There are trees, however, the bark of which is too hard and unyielding for this simple method of drilling, and in such instances the Hairy Woodpecker has been observed to attack the fortifications of the grub with surprising perseverance and, one might almost add, ingenuity, if such a term could be applied to a bird. Drilling first from one side and then from the other, in all directions, ripping off the bark in considerable pieces meanwhile, it soon reaches the tunnel of its prey. Should the tunnel be deep and crooked, the Woodpecker cannot catch the grub with its beak, but must run out the spearlike tongue and "harpoon" the "borer," adroitly drawing it in when the strongly nipping mandibles close upon it.

In the genus *Dryobates*, a sticky secretion about the tongue aids in the capture of smaller insects, while clumps of stiff hairs that cover the nostrils prevent dust or tiny chips from entering the air-passages. Some Woodpeckers drill more than others, and among these are the Hairy and Downy.

Nest and Young Not all of the hammering and drilling, however, is done to secure food. In some dead branch, stub, or dying part of a living tree, where the wood is sufficiently decayed to make excavation easy, the Woodpecker begins nesting operations, seldom choosing a natural cavity, preferring to drill a fresh hole from start to finish. To quote John Burroughs: "The bird goes in horizontally for a few inches, making a hole perfectly round and smooth and adapted to his size, then turns downward, gradually enlarging the hole, as he proceeds, to the depth of ten, fifteen, twenty inches, according to the softness of the tree and the urgency of the mother bird to deposit her eggs. While excavating, male and female work alternately. After one has been engaged fifteen or twenty minutes, drilling and carrying out chips, it ascends to an upper limb, utters a loud call or two; when its mate soon appears, and, alighting near it on the branch, the pair chatter and caress a moment, then the fresh one enters the cavity and the other flies away." A layer of fine chips is left on the bottom of this skilfully fashioned nest, upon which usually four to six glossy white eggs are laid.

May is the month when the Downy and Hairy generally nest; but April, June, or even July sometimes finds an early or late pair rearing their young. In the North, only one brood is raised during a season; but it is not uncommon in the South for one brood to be raised in May and a second in August.

Both parents take turns incubating the eggs. Just how they find their way about the dark, smoothly polished nest-hole, to feed the naked young in proper order and to keep them clean, must be guessed at. It is known that they pump pre-digested food into the little ones' stomachs by the process of regurgitation. As the nestlings grow old enough to leave the nest, they climb up to the edge of the hole, whence first one and then another greedy bill pops out to greet the returning parent.

Food Scientific investigation, shows that 74 per cent of the Downy's food and 68 per cent of the Hairy's is made up of insects. Chief among these are the highly injurious wood-borers, gipsy-moth pupæ, and many kinds of hairy caterpillars. While the Downy relishes the destructive codling-moth and pine weevil, the Hairy is a foe to the huge Cecropia moth. Both Woodpeckers eat bark beetles, ants and plant-lice, but the Hairy relishes the beetles most, while the Downy eats a larger number of the dangerous ants and aphides. In localities where grasshoppers become a pest, both the Downy and Hairy will devour the eggs and adults. An exceptionally beneficial practice is their habit of ridding a tree thoroughly of insect pests before leaving it.

The vegetable matter preferred by these Woodpeckers comes mostly from swampy thickets and uncultivated shrubs. A few wild berries and seeds, occasionally beechnuts, a gall, or in the spring a few flower buds or petals, make up this part of their diet. A frozen apple in winter, or a wormy one in

the fall, may furnish the Downy with a toothsome bit; but it is the worm and not the ripe apple which he is after.

When food is scarce in the winter, both the Hairy and Downy are glad of a piece of suet, and the Hairy will not disdain a few ears of corn. These industrious guardians of the trees are sometimes called the Big and Little Sapsucker, but they do not deserve the name. The amount of sap they take is so small as to be hardly worth mentioning. It is true that in eating the seeds of the poison ivy and poison sumac, they, in common with many other birds, distribute these objectionable plants. They may also get a trifle of the inner bark of the tree, when drilling for borers. The experts now engaged in studying the spread of the dreaded chestnut disease fungus have a suspicion that birds which find their food on the bark of trees may unwittingly spread this contagion by means of the adhesion of the fungus to their bills and feet. If this should prove to be so, it would furnish a striking instance of the unfortunate results of man's interference with nature. By introducing foreign species of the chestnut, which in this country, rapidly succumb to and spread the noxious fungus with which they may be infected, man has upset the balance of nature to such an extent that even the most beneficial birds may work some harm by spreading the contagion, at the same time that they are ridding the trees of deadly insect pests.

It is difficult to see how many species of trees could thrive, or even survive, without the unremitting care of the Woodpeckers. Alexander Wilson spoke of the entire genus of Hairy and Downy Woodpeckers as "birds which Providence seems to have formed for the protection of our fruit and forest trees." He had the good judgment to see that the bounty laws enacted in his time for the destruction of these beneficial birds were the result of wholly misguided public sentiment. His admonition, "Examine better into the operations of nature, and many of our mistaken opinions and groundless prejudices will be abandoned for more just, enlarged, and humane modes of thinking," sounds like a prophecy which in this day and generation is being fulfilled.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City

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Classes of Membership in the National Association of Audubon Societies for the Protection of Wild Birds and Animals:

\$5.00 annually pays for a Sustaining Membership
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Robin Protection

The Robin is now on the list of protected birds in the state of Virginia. On March 1, 1912, Governor William Hodges Mann signed a bill which had just passed the Legislature, making it a misdemeanor, punishable by a fine of \$5, to kill a Robin under any circumstances in the state of Virginia. Heretofore, this bird has been one of those species which it has been legal to shoot for game.

This recent action was brought about as a result of a campaign which this Association has waged in the state over a period of nearly two years, in which it has had the assistance and co-operation of the State Audubon Society under the leadership of Mrs. E. H. Harris, President.

The enactment of this measure has been a very live subject in Virginia during the past winter, and no less than 10,000 school children responded to our appeal for petitions to the Legislature, asking that body to enact the law. In fact, this petition was presented to the Virginia Senate by a battalion of children from the schools of Richmond.

That the agitation of the subject by the Audubon workers has been exceedingly effective was evidenced by the fact that the bill passed both branches of the Legislature by a very large majority, and it is to be hoped that this law will never be repealed or receive any harmful amendments.

Much credit is due to Miss Katharine

H. Stuart, of Alexandria, who, as field agent of this Association and school secretary of the Virginia State Audubon Society, has labored with untiring energy to secure the desired result.—T. G. P.

Birds and the Recent Snowstorm

The past winter has been an unusually severe one on the wild bird life of the northern United States, because of the protracted period of snow and sleet which, to a large extent, covered their natural food.

The public press has contained many accounts of the suffering of birds in various parts of the country.

Near Penn Yan, New York, where the ice on the lake long remained frozen, large numbers of Canvasback Ducks became so weak that they either starved or in a weakened condition were attacked and eaten alive by Crows and Gulls. At Fairport, large flocks of Pheasants came to the barnyards and fed with the domestic fowls.

In Virginia, Meadowlarks and Bobwhites are reported to have sustained much loss, whole covies of the latter having been frozen, in many communities.

In Pennsylvania, Dr. Joseph Kalbfus, Secretary of the State Game Commission, reports the death, by weather, of thousands of Wild Ducks and other waterfowl on the lower reaches of the Delaware.

Bobwhites and Prairie Chickens suffered so severely in Iowa that the Waterloo

(Iowa) Courier calls aloud for a law to prohibit all killing of these birds for a period of years, in order to perpetuate the species. Another paper declares that seventy-five per cent of these birds have been killed by the severe weather.

A Wisconsin paper, dated January 31, 1912, said: "There is plenty of evidence that thousands of Partridges, Grouse and Prairie Chickens froze to death, or fell an easy prey to wildcats, weasels and mink." A New Jersey writer for the New York Evening World of February 6, 1912, reports: "Rabbits, Pheasants, Grouse, Quail and Hungarian Partridges are dying from hunger in Northern New Jersey, because of a coating of ice underneath the snow, through which they can-

not dig holes for food. Since the fall of snow, Saturday night and Sunday morning, the hungry birds have become tame. In Morris county, yesterday, more than one farmer fed game along with his barnyard fowl. Wilbur Collud, of Pine Brook, went to his barn at milking-time, yesterday, and found twenty Quail half-frozen under a cedar bush. They were so weak from lack of food that they could not fly, and Collud captured all. Half-starved rabbits, many almost as tame as house cats, are hiding under barns and houses. Their burrows are frozen up. All the coves and marshes along Great South Bay are frozen, and Wild Ducks, which gather there in great numbers at this season, are starving. Gunners, yesterday,



CHARITY TO THE OUTDOOR POOR
From New York Evening Mail, January 17, 1912

went out on a schooner loaded with bird food. This was scattered about and was greedily consumed by the birds. The strange relief expedition found many Ducks that had perished."

From Massachusetts came many alarming reports. A dispatch from Martha's Vineyard said: "Whole flocks of game-birds are dying of starvation about the island. The cold wave, the coldest experienced here in years, by freezing over the feeding-grounds of the birds for such an extended period, has deprived them of food. The harbor of Edgartown is covered with three feet of solid ice, and hundreds of birds are dying there every day. It is possible to walk in among a flock of Wild Black Ducks on the ice without disturbing them in the least, an almost unheard of proceeding."

A message from Kansas states: "Farmers say that Quail will be scarce this year. They report that thousands of Quail froze during the recent storm, and that hundreds of dead birds may be found scattered over fields. They died from starvation, being unable to reach food covered by the snow. Traveling men who have made trips into the Wichita territory since the storm say that a farmer throwing grain to Quail on his farm, as well as to his poultry, was not an uncommon sight."

In the Charleston (S. C.) News and Courier for January 19, appeared the following news item from Florence, South Carolina: "As a result of the big snow-storm and freeze, the birds had a tough time. Doves that were not frozen to death outright were slaughtered by pot-hunters, for they were to be found huddled around corn-shocks, fodder-stacks, and unused buildings in the fields, endeavoring to keep from freezing, and hunting food."

When, on the afternoon of January 12, it became apparent that there must exist much suffering among the birds because of the lack of food, telegrams were sent from this office to many Audubon workers throughout the territory, from Virginia on the south to Illinois on the west, asking them to call upon the public to feed the birds. An article bearing on the subject

was also mailed to one hundred and twenty daily newspapers throughout the danger zone.

The response by the general public was instant, and in many cases most effective, and the Audubon workers took hold of the matter with zeal. As a single example, we may mention that Mr. M. D. Hart, Treasurer of the Virginia State Audubon Society, secured permission from the authorities of the railroads running into Richmond to haul grain, free of charge, and to have their section hands distribute it along the railroad tracks. Within forty-eight hours, over two hundred bushels of food was distributed in this way from Richmond. The Game Commissioners of several states instructed the Wardens to systematically feed the birds.

January 17, the New York Evening Mail published a cartoon, which we here reproduce, entitled "Charity to Outdoor Poor." Other newspapers printed cartoons of a similar character, and the editors have told us that these were inspired by the call issued by the Audubon Societies.

—T. G. P.

Bird Famine Relief Work

In connection with the present widespread interest in the feeding of wild birds, the following letter from Mr. H. W. Henshaw, Chief of the Bureau of Biological Survey, United States Department of Agriculture, will, we feel sure, be of interest to the readers of BIRD-LORE:

"Every few years we have a winter, with longer or shorter periods of unusually severe weather, like that of the first six weeks of 1912, when birds perish in large numbers unless succor be given them. At such times sporadic attempts are made to counteract the disastrous climatic condition by furnishing food to the starving birds,—starving because snow and ice have covered their natural food-supply. These efforts are mainly directed toward the preservation of Quail, though many dwellers in suburban or rural precincts scatter seeds of various kinds, chopped nuts, fruits, and table scraps, and fasten

pieces of suet or bacon or meat bones to the branches of trees, to satisfy the needs of the smaller birds of the neighborhood. It is probable that the individuals concerned in feeding non-game birds outnumber those actively distributing food for Quail, but Quail feeding is conducted on a larger scale and by more systematic methods. Thus, during the prevalence of the arctic weather of the present winter, in addition to the many farmers who scattered grain in various places about their farms, game associations, game wardens, rural free-delivery carriers, and other officials, more or less systematically placed Quail food in suitable places. In the District of Columbia, the mounted police, under the order and at the expense of the police department, maintained regular feeding-stations for Quail and other birds. The state game commissioner of Missouri instructed his deputies to feed the Quail while the severe weather lasted, and the expense was charged against the game-protection fund. In Michigan, here and there, rural-delivery carriers scattered grain along their mail-routes. In a few other states similar methods were practised, but, in most, the work was left to the individual unorganized action of farmers and sportsmen.

"Although more or less feeding of Quail was done in every state where conditions called for it, and although the middle states were particularly active in the matter, yet, without doubt, millions of Quail, to say nothing of other birds, perished. So extensive was the territory invaded by the Ice King that the localities where birds were fed constituted but a few pin-points in a vast territory, in the rest of which our feathered friends were left to shift for themselves. It is thus apparent that more perfectly organized efforts to save our birds are needed, and I heartily concur in the suggestion contained in a recent letter to me from Mr. T. Gilbert Pearson that a central committee, to provide for the winter feeding of birds, should be organized to coördinate the very scattered and disconnected activities that now prevail. I believe,

further, in the wisdom of a suggestion made by the American Field that a part of the game-protection funds raised by the states through receipts from hunting licenses and penalties might well be applied to the preservation of birds during severe weather, instead of being devoted as now solely to enforcing laws and restocking covers. It is a wiser, as well as a more humane policy to prevent the extermination of our birds, rather than to restock the covers depleted by starvation.

"Besides the obvious advantages of a more thorough covering of the famine territory, which would result from supervision by a central committee, such a committee would enable the work to be undertaken at an earlier date, and would thus save thousands of birds whose deaths are in too many instances the first cause of directing attention to the need of succor. The New Jersey wardens fed four or five thousand Quail immediately after a heavy fall of snow on December 5, 1911, but in nearly all states no measures of the kind were taken until January, 1912.

"It appears to me that the work could be more effectively done by the formation of two committees,—one by the Audubon Societies for the feeding of non-game birds, and the other by the Sportsmen's Associations and state game-warden departments for the feeding of game birds. I may add, in conclusion, that the Biological Survey of the Department of Agriculture will be glad to coöperate with such committees so far as lies in its power."—T. G. P.

Feeding Birds

On the grounds of the Washington Biologists' Field Club, near Washington, D. C., Dr. A. K. Fisher has long made a point of feeding wild birds which frequent the premises in winter. The accompanying photograph shows a Downy Woodpecker eating the meat from a cocoanut. This unique plan of furnishing a supply of excellent bird food might well be copied by others.

In writing us of his experiences, Dr. Fisher says:

"Quail, Ducks, Tree Sparrows, Song Sparrows and Cardinals are fed on cracked wheat, rolled oats, and finely chopped suet. The Crested Titmice, Chickadees, Juncoes, and Downy Woodpeckers, feed regularly on suet placed in the cocoanut shells. I also feed the birds on the ground with a

believe that the Woodpeckers would materially increase in number, as these specialized birds must have difficulty in securing an adequate amount of insect food."—T. G. P.

White Egret Protection

An unpaid agent of this Association has been camping in South Florida, and writes us, under date of February 27, 1912, that he has found a large colony of American Egrets, which he estimates at 600 birds, which are roosting with several thousand Ibises. The spot they occupy is near the place which a little later will be their breeding-grounds. In fact, he states, the White Ibis are already beginning to make their nests.

The following is a quotation from his letter:

"I spent two days and nights camped here, and made three counts of the Egrets as they came in to roost or left in the morning. The first time I saw 522, the next 534, and the last evening counted 541.

"This is the scene where we shortly found that the plumers were shooting them, and the last night, as I was counting, shooting commenced on the other side of the Cypress, at least a mile from camp, and we counted 123 shots. Evidently four men with shotguns were shooting them at their roost, which is two miles from where they will nest.

"It is getting too dark to cross the Big Cypress at night, so, early in the morning the guide and I crossed. I carried my camera, for I wanted to get some pictures, to show you just what is going on.

"The alligators and wildcats had eaten most of the bodies, but I counted 41, and there must have been twice that number killed. I found three with the plumes still on, that evidently were lost in the darkness, and one was lodged in a tree, as shown in the picture.

"We waded over a mile, waist deep, to find the camp of the hunters, and found it just deserted, the fire still burning, and showing that four men had just departed on horseback.



DOWNY WOODPECKER FEEDING ON A
COCOANUT
Photographed by H. S. Barker

mixture of chopped suet, hemp seed and rolled oats.

"I first got the idea of feeding birds during winter about forty years ago from one of my old friends at Lake George, who used up at least twenty-five pounds of fat pork and suet each winter in feeding the Chickadees, Nuthatches and Woodpeckers. These birds became so tame as to alight on the heads and shoulders of the children standing near the feeding-stations. If the habit of putting out animal food for birds should become universal, I

"I trust you can prevail on some of the patrons and humane people to put a stop to this. It can be done easily with a little money, and, as there must be 600 birds that will begin nesting in two weeks, if unprotected there will not be a single bird left.

"I can get a man to watch it—a good man who lives in the woods and knows all the plume-hunters, and who will put a stop to it if you can raise enough money to engage him. We can get him deputized here also, and he will then tell all the hunters he is a warden to guard the Big Cypress until the birds leave. He will also guard the ——— Rookery and

the ——— Rookery [names purposely omitted.—ED.].

"He would require a team to have his supplies sent in, and would be under pretty heavy expenses; but this could be covered by a cost of \$100 a month, and he will take the job for four months; one-half of this amount would go for his expenses."

The last two Rookeries mentioned above contain in the neighborhood of 200 Egrets. These are some of the largest colonies of which we have been able to get positive information of late, and it appears that it is practical to undertake to guard them. We know of a few colonies in South Florida which we do not deem it advisable to



AMERICAN EGRET KILLED BY PLUME HUNTERS IN SOUTH FLORIDA LATE IN FEBRUARY, 1912, AND OVERLOOKED IN THE DARKNESS

Photographed just as it was found hanging in a tree where it had lodged in falling

undertake to try to protect, for the reason that they are in such isolated, unhealthy situations that it is impossible to get men, for any ordinary sum, to risk their health or lives by taking up a station in those desolate regions.

We are exceedingly anxious at once to send agents into other regions, to locate new colonies of these fast-disappearing birds. The very splendid success which attended our efforts in this direction last year, has encouraged our Board of Directors to call upon the public to assist in this most humane undertaking.

We need a fund of not less than \$5,000 annually, for the next few years, to use in seeking out and guarding colonies of these birds, and also in pushing legislative activity looking to the restriction of the selling of the feathers of these birds in those states which still permit this traffic. We earnestly urge every reader of this article who feels that it is a cause worthy of support to make some contribution to the work; and, to be effective, our work of guarding colonies must begin at once.

Contributions of any amount will be gratefully accepted, and acknowledgement of the same will be made in BIRD-LORE.

Subscriptions to the Egret Protection Work for 1912

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 Van Dyke, Mr. Henry
 Van Huyck, Mr. F. M.
 Virginia Audubon Society
 Walker, Miss Lydia M.
 Walser, Mr. C.
 Weaver, Mr. Walter B.
 Warner, Mrs. Lucien C.
 Waterhouse, Mrs. A. W.
 Wetherill, Mr. W. H.
 Wheelock, Mr. William E.
 White, Miss Caroline E.
 Willis, Mrs. Sarah L.
 Wiman, Mr. W. Dwight
 Woman's Club, Seymour, Conn.
 Wooster, Mrs. E. C.

New Contributors

"A Friend"
 Anonymous
 Barber, Mr. W. V.
 Bostwick, Mrs. George W.
 Brown, Mrs. Fanny G.
 Burke, Mrs. Adelaide
 Calkins, Mrs. Wolcott
 Clark, Mrs. R. M.
 Drexel, Mrs. Lucy W.
 Gregory, Mrs. A. K.
 Grace Church School
 Hamlin, Mrs. T. O.
 Loomis, Miss M. E.
 Matteson, Mrs. A. R. B.
 Melcher, Miss Mary E.
 Morgan, Mrs. Junius
 Noeth, Mr. G. E.
 Perkins, Miss Mary R.
 Phillips, Mrs. and Mr. M. B.
 Platt, Mrs. O. H.
 Smith, Mrs. Charlotte C.
 Stafford, Miss Edith L.
 Stafford, Mr. Earle F.
 Sweetser, Mrs. F. E.
 Talbot, Miss Mary
 Tracy, Mr. C.
 Wood, Mrs. Willis D.

A Tribute to the Late Mrs. Henry T. Grant

The Audubon Society of Rhode Island has recently suffered a severe loss in the death of Mrs. Henry T. Grant, who organized the society in October, 1897, and for nine years was its efficient and devoted Secretary. Possessed of good judgment, great patience and unbounded enthusiasm, together with a quick-seeing eye and a musical ear, she came well equipped to the study of birds.

Nominally she held but the one office, but those who worked with her from the beginning knew she was always the guiding, compelling force that helped to override all difficulties and to carry the Society over many discouragements by sheer force of her enthusiasm.

She saw clearly from the beginning the need of good laws and the wisdom and advisability of a campaign for education to awaken public sentiment and insure their enforcement.

After failing health and strength compelled her to resign from the secretaryship, her interest never flagged and her counsel was always sought on matters of importance to the Society.—Mrs. J. N. BOWNE.

Miscellaneous Notes

As the domestic cat is one of the most destructive agencies to our wild-bird life, it is encouraging to know that the American Society for the Prevention of Cruelty to Animals is constantly on the lookout to destroy vicious and worthless cats.

In reply to our request of President Wagstaff for a statement as to the number destroyed during the past two years, we learned that in 1910 the Society put to death 257,403, and during the year 1911 303,949.

DR. EUGENE SPOPE of Cincinnati, a recently appointed field agent of this Association, has arranged a long series of lectures in Ohio schools for the spring. During February, his school audiences numbered 200 adults and about 1,500 children.

He is also engaged in organizing Junior

Audubon Classes in the schools, and we may expect to hear good reports of his efforts.

Miss Katharine H. Stuart, field agent for Virginia, while in Richmond in the interests of the two Audubon bills pending in the legislature, found time to give bird talks to 9,713 children assembled in the various schools.

A BILL for the establishment of a State Game Commission, supported by resident and non-resident hunters' license fees, was introduced some weeks ago in the Virginia legislature by the request of the State Audubon Society. Mr. J. C. Wise and Mr. M. D. Hart of the Audubon Legislative Committee have been devoting much time and energy to the passage of the measure.

As we go to press we learn that the bill has been favorably reported, and that it will probably shortly come to a vote in the lower house.

It would be difficult to overestimate the benefit which would accrue by the passage of this bill.

THE subject of placing the protection of migratory birds under federal control is again a live issue. Several bills looking to this end have been introduced during the present session of Congress.

On March 6, a large delegation of men interested in bird and game protection from all over the country, assembled in Washington and was given a hearing on the McLean Bill before the Senate Committee on Forest Reserves and Protection of Game.

The same day the Committee on Agriculture gave a hearing on a similar bill introduced by Congressman Weeks. It was a striking fact that every one present favored the proposition under consideration, for it has been rare in our experience to attend a legislative hearing where no opposition developed.

At this writing, the Committees have not yet taken action, but if they do not report the bills favorably it will probably be because of the question existing in the minds of some of the members as to

whether such a bill would be constitutional.

ON March 2, the National Association received a check from \$284.50 from the legacy of Ephraim B. Repp, deceased.

Mr. Repp was a carpenter, and had lived in Washington, D. C., for the past thirty-five years. He had always been greatly interested in bird protection, and encouraged many people to become members of the Audubon Society. That he desired to see the good work carried forward is shown by his making provision that a portion of his estate should go toward the support of the Audubon movement.

THE first arrest for violation of the new Audubon Law in New Jersey, which prohibits the sale of aigrettes, was made on March 1, when Game Warden H. M. Loveless arrested Isaac Goldberg, head of the firm which operates the Goldberg department store in Trenton, and the same day he arrested a woman who operates a millinery store in Trenton.

Both defendants were charged with selling and offering for sale Heron aigrettes. The woman pleaded guilty on six counts, and paid a fine of \$160. Goldberg paid a fine of \$300, under protest, and the case will be carried to the higher courts.

This should be a warning to other milliners in New Jersey, for Mr. Ernest Napier, the State Game Commissioner, does not intend to permit this law to be violated with impunity.

FIVE additional National Bird Reservations have recently been created by executive order. Mr. Frank Bond, of Washington, one of the members of our Advisory Board, who prepared and submitted the necessary papers for President Taft's signature, reports that these new reservations will add much to the territory already set aside by the Government for the protection, at all times, of wild birds, their nests, and eggs.

Three of these were created on January 11. Two of them, Forrester Island and Harvey Islands Reservations, are situated

on the coast of Alaska; the third, Niobrara Reservation, containing about twenty-three square miles of land, is located in Northern Nebraska. On February 21, Green Bay Reservation, regularly known as Hogg Island and situated in Lake Michigan off the coast of Wisconsin, was established.

DURING the heavy fall of snow in January, the Robins came in great numbers to the town of Pittsboro, N. C., and fed on the berries of the cedar trees.

In order that the birds might be killed without restriction, the Board of Aldermen suspended the Ordinance against the firing of guns in the town, and permitted the inhabitants to kill the Robins.

Hon. Bennet Nooe, the Mayor, not approving of this action, resigned. In a letter to us he says:

"I was out of town for a few days, during which we had some unusually bad, snowy weather, and the birds, not being able to get food on the ground, had to go to the cedar and other berry trees for food and, as it happened, there were a lot of trees in the town which they fed from. About all of the male population promptly got guns and went for them.

"Hearing of this, on my return, I went to the Aldermen, *all of whom were guilty*, and told them that they and all others who were guilty would have to be fined; three out of five submitted and paid up, but they insisted that the ordinance be changed to read exactly as it is written here, with the exception that *all could shoot Robins in the town until the first of March*; whereupon I resigned, as was stated.

"It is estimated that about four thousand Robins were killed during the few days that the birds were here. This of course, does not include the county, but just in and around the town."

IN the report of a trip to the coast of Virginia by Mr. H. H. Cleaves, published in the November-December BIRD-LORE, the dates given should have been June instead of July. The pictures which accompanied the article were taken on Wrack Island.



- | | |
|--|--|
| 1. BLACK-HEADED GROSBEAK, Adult male | 4. ROSE-BREADED GROSBEAK, Young male |
| 2. BLACK-HEADED GROSBEAK, Adult female | 5. ROSE-BREADED GROSBEAK, Adult male |
| 3. BLACK-HEADED GROSBEAK, Young male | 6. ROSE-BREADED GROSBEAK, Adult male, winter |
| 7. ROSE-BREADED GROSBEAK, Female | |

Bird = Lore

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OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

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No. 3

An Eighteen-Year Retrospect*

By FRANK M. CHAPMAN

A REVIEW of the progress which has been made in the study of North American birds during the eighteen years since the first edition of the 'Handbook' was published, must impress one with the fact that it is our knowledge of living rather than of dead birds which has increased.

A more exact discrimination, larger and better collections, and gradually changed standards as to the degree of differentiation which deserves recognition by name, have added many forms to our 'Check-List,' and rendered more definite our knowledge of the relationships of others. Particularly is this true of the birds of the Pacific coast region. This systematic work has appeared in various special papers and monographs, the most thorough of which, not only for the period under consideration, but for any preceding period in the history of North American ornithology, is Ridgway's 'Birds of North and Middle America,' of which five volumes have thus far been issued.

Thanks to the American Ornithologists' Union, our nomenclature has been revised with the utmost care and, while the numerous resulting changes in names may be annoying to present-day students, those who follow us will enjoy, in greater measure, that stability which is the ideal of the biologist. The third (1910) edition of the Union's 'Check-List' contains this modern nomenclature; but it is worthy of note that the classification employed in this work is the same as that used in the first (1886) edition of the 'Check-List.' So little advance has been made in this branch of ornithology that no system of classification proposed since 1886 was considered sufficiently satisfactory to warrant adoption by the Committee of the Union having in charge the preparation of the 1910 edition.

The studies of Dwight and others have made far more definite our knowledge of the molt of birds, the times and manner of feather-loss and renewal having been determined for many species, with an exactness made possible only by the collecting of specimens for this special purpose. At the same

*Forming the Historical Introduction to the revised edition of the Handbook of Birds of Eastern North America. Published by permission of D. Appleton & Co.

time, Beebe, by experiments on captive birds, has attacked the problem of the causes of molt, while Strong's histological work on the feather has increased our understanding of its growth and development.

In laboratory experiments on living birds, Beebe has shown certain effects of humidity upon the colors of feathers; Davenport has used Canaries and domestic fowls in working on the laws of heredity; Porter and others have conducted psychological investigations upon certain species; and Watson has pursued similar studies upon the Noddy and the Sooty Tern in nature. The highly original researches of Thayer have greatly stimulated interest in the study of the colors of birds in relation to their environment.

Dealing still with the more technical branches of ornithology, the investigations of Fisher, Beal, and other members of the Biological Survey of the United States Department of Agriculture, of Forbush in Massachusetts, and of other state ornithologists, have supplied by far the larger part of our exact knowledge of the food-habits of our birds and determined for the first time the economic status of many species. This work constitutes one of the most pronounced and important phases of research during the period under consideration. While based, primarily, on field work in observing as well as in collecting, special training in laboratory methods is required to make the analyses of stomach contents, from which, in the main, the nature of a bird's food is ascertained.

Field, as well as laboratory work, has also been required to produce the faunal papers and books which, in volume, form the greatest addition to the ornithological literature of the past decade and a half. From the pioneer explorations of Merriam, Fisher, Nelson, Bailey, Preble, Osgood, and other members of the Biological Survey, in new or but little-known regions, to the almost final reports of Brewster and others on the bird-life of localities which have been studied for years by many observers, these publications have added enormously to our knowledge of the distribution of North American birds. This is particularly true of western North America, especially of the Pacific coast region, where Grinnell, W. K. Fisher, Swarth, and other members of the Cooper Ornithological Club, have placed on record a vast amount of data concerning the birds of this area.

Besides furnishing material for the more philosophic phases of faunal work, these monographs and local lists often treat also of the migration of the birds with which they deal. Most important contributions to this subject have been made by the large and widely distributed corps of observers acting under the direction of the Biological Survey, which, under the authorship of Cooke, has published several important bulletins on migration. Here also should be mentioned the significant experiments of Watson upon the homing instincts of Terns, which are referred to beyond.

Possibly, in no other branch of definitely directed ornithological research has greater advance been made than in the study of the nesting habits of

birds. For the first time in the history of ornithology, trained biologists have devoted an entire nesting season to the continuous study of certain species, and the results obtained by Watson, Herrick, Finley, and others have, in a high degree, both scientific value and popular interest.

No small part of the educational value of work of this kind is due to the photographic illustrations by which it is usually accompanied, and bird study with a camera may be said to be the most novel and, in many respects, the most important development in ornithological field work during the past fifteen years. Not only has the fascination of camera hunting itself stimulated the bird photographer, but the results he has obtained have at times had a commercial value, which has enabled him to pursue his labors in before-unexplored fields. In consequence, in the books of Job, Finley, Dugmore, and others, and in numerous magazine articles, we now have thousands of graphic records, not one of which existed fifteen years ago, depicting the home life of some of our rarest as well as commonest birds, and possessed of a power for conveying and diffusing information with which the written word cannot compare.

Here, too, should be mentioned the work of the ornithological artists who, led by Fuertes, have given us an unsurpassed series of faithful and beautiful portraits of our birds, to the educational value of which, in no small measure, is to be attributed the existing widespread interest in bird study.

It is the growth of this interest which has chiefly distinguished the past two decades; for, much as they have been marked by activity in various branches of ornithology, it is less as an exponent of natural laws than as a most attractive form of wild life that the bird has made its appeal. In the history of North American ornithology, therefore, this period may well stand as the Epoch of Popular Bird Study. Where, in 1895, there was one person who could claim acquaintance with our commoner birds, today there are hundreds; and the plea for the development of our inherent love of birds, which was made in the first edition of the 'Handbook,' has been answered with an effectiveness few would have predicted.

Opportunity alone was needed to bring to its fulfilment this inborn interest in creatures which have such manifold claims to our attention, and with which we may become so intimately associated. This opportunity has come in popular manuals of bird study, which, in the aggregate, have been sold by hundreds of thousands; in the introduction of nature study in the schools, in the formation of bird clubs and classes, through the far-reaching and important work of the National and State Audubon Societies, through popular lectures, through magazines devoted to bird study, and the greater attention of the press in general to bird studies—particularly such as are illustrated by photographs—through increased museum facilities, and through the closer relation everywhere existing between the professional or advanced student and the

amateur, a relation which must be attributed primarily to the influence exerted by the American Ornithologists' Union.

It is the diffusion of this widespread knowledge of the economic, as well as the esthetic importance of birds, which has made it possible to secure the passage and enforcement of effective laws for their protection; and it is in this continued and increasing interest in birds, not alone as our efficient co-workers in garden, field, orchard and forest, but as the most eloquent expression of nature's beauty, joy and freedom, that we shall doubtless find a true measure of their greatest value to man.

The Wood Thrush

By JANE S. DAVIS

'Midst the fern a call I hear,
Flute-like wood notes, pure and clear:
"Come to me."

Opening notes from nature's throng
Fill the early day with song:
"Come to me."

Then in benediction calm,
When the tired soul needs balm:
"Come to me."

Sweet and restful, pure and clear,
Hymn of praise, O bird, I hear:
"Come to me."



The Golden-Winged Warbler at Rhinebeck, N. Y.

By MAUNSELL S. CROSBY

ALTHOUGH twenty-nine members of the Warbler family visit Rhinebeck, only eleven species are summer residents. These are the Chestnut-sided, Worm-eating, Golden-winged, Pine, Black and White, and Yellow Warblers, Maryland Yellow-throat, Redstart, Yellow-breasted Chat, Louisiana Water-Thrush, and Ovenbird. With the exception of the last-named and possibly the Yellow-throat, the Golden-winged Warbler is the commonest and most noticeable of the family on my farm. From six to eight pairs nest here regularly; but only twice have I had the good luck to find a nest. I usually wait until the migration is over before beginning nest-hunting, and I now know this to be the reason for my many failures.

On June 11, 1902, I found the first nest. It contained two young Warblers, a young Cowbird, and an addled Cowbird's egg. Although it was much larger than the Warblers, the Cowbird was evidently younger, pointing to a rather unusual mistake in calculation on the part of its parent; for this is the only instance that I have recorded of a Cowbird's allowing its nest-mates to mature with it. I endeavored to remove the interloper, but he clutched a young Warbler by the leg, and in a instant they had fluttered out and disappeared into the underbrush. I was unable to find them again, and went home sadder but wiser.

Last year the Golden-wing arrived on May 10. On May 14, while migrant members of the species were everywhere to be found, I saw a female tugging at a piece of grape-vine bark, and a moment later she flew straight down to a little cup of dead oak leaves set about three inches from the ground in plain view on the border of a narrow strip of woodland. The grass and leaves had barely begun to grow, hence the extraordinary lack of concealment. Two days later the nest was still empty, but, as the old bird was near-by, I kept up hope. On the 18th I found two eggs in the nest, and on the 20th the bird was sitting, so deep down that I had to stand almost directly over the nest in order to see her. She never stirred, so I put up my blind about eight feet from the nest and returned home, to await the arrival of some fresh plates.

Two days later the plates came, and so, early on the 23d, I hurried down to set up my camera. All the time I was moving it about and snipping off protruding twigs and leaves, the bird never moved. If it had not been for two or three large leaves sticking up from the side of the nest itself, I could have photographed her without frightening her off. No wonder I had never before flushed one while hunting for her nest! After photographing the eggs (there were now five), which was very difficult, owing to the depth of the nest, I set the shutter and left for about ten minutes, without troubling to use the blind. On my return, I found the Golden-wing back on her nest, and proceeded

to photograph her to my heart's content, the only trouble being that hardly anything but the end of her bill was visible.

By the 26th I was fairly certain that she would not desert, so I took the liberty of tipping the nest toward the camera, and in this manner obtained a much better view of her, as she sat motionlessly watching me snap the shutter and change plate-holders less than five feet from her, the front leg of the tripod being planted directly under the nest.

On June 1 the eggs hatched, and both parents took part in the feeding of the young. The male had hitherto been very little in evidence near the nest, but he now worked vigorously, being so busy that he had to cut his *swee-zee-*



FEMALE GOLDEN-WINGED WARBLER ON NEST

Photographed by Maunsell S. Crosby, May 26, 1911

zee-zee song down to a curt *swee-zee*, not, however, long drawn out, like the Blue-winged Warbler's note. I may here state that in 1910, when a pair of Golden-wings nested not far from this same spot, I noticed that the male's only song was the real Blue-wing's song, a prolonged "swee-zee," the first part apparently inhaled and the last exhaled. This seems odd, as I have never recorded a Blue-winged Warbler in this county, and the only Brewster's Warbler I ever saw (May 8 and 9, 1909) sang the usual Golden-winged Warbler's song.

Continuous bad weather interfered with my photographing the old birds feeding their young, and only on June 9, the day before they left the nest, was I able to spend an hour with them; and then the results were unsatisfactory.

One Little Hummer and I

By WINIFRED HOLWAY PALMER, Machias, Maine

LATE one summer morning when the weather had suddenly become damp and chilly, I heard the *seep, seep*, many times repeated, of one of a pair of Ruby-throated Hummingbirds which had been hatched near our home. Out-of-doors I ran, but there was no Hummer to be seen. Still the cries continued, and, following them slowly, at last they led me to a window-box full of nasturtiums, radiant with many colors. Now the cries were close at my feet, and there lay the little creature with eyes closed, and tiny claws close-clasped about a spear of grass!

In the house I warmed a soft cloth and folded around it and placed it in a small pasteboard box. Its little cries had ceased, and I felt sure that the warmth would soon revive it. Again I heard, fainter and farther away than before, "seep, seep," over and over, sharp and protesting. "There is the other!" I exclaimed, and started in the direction whence the sound came. Past the sweet peas, past the climbing nasturtiums and the clematis the crying led me, until I reached the enclosed garden, at the west end of the house. In this garden, under the hardy hydrangea, clinging to a spear of grass with tiny, thread-like claws, I found it. Another soft cloth was warmed and wrapped about the tiny body, and it was placed beside the first one in the box. It was not long before the warmth had revived them, and I uncovered them, so that we might see them. For a time, both sat quietly in the box, looking at us with their bright little eyes, but showing no fear. We left them so, sitting side by side in the box, only looking at them very often to see that all was well, as as well as to delight our eyes with their beauty.

Suddenly, *whiz!* one flew to the vase of flowers and hummed about them. Then around and around the room over our heads it went, alighting at last on a wire stretched across a corner, to support an ivy vine. Here it sat looking about, and presently flew again, alighting, in a short time, in the same place as before. This performance it repeated again and again. Meanwhile the day had brightened somewhat and become quite warm and pleasant. It has always seemed to me that the place for little wild things is out of doors where Nature put them. I decided that, as the little bird was able to fly so long in the house, it could certainly take care of itself in its native element, so I opened the door, and *whiz!* it was gone. It grieves me to have to tell that next morning I found its little dead body in the grass, and I resolved to keep the other until the weather became warmer. The one which remained made no attempt to fly that day. It showed no fear of me, and would make no effort to resist when I took it in my hand. It inserted its bill in the nasturtiums which I placed beside it, and rested content in its pasteboard nest. I cut small holes in the box and in the cover, and at night took it to my room and placed it on the stand by my bedside. In the morning, when I removed

the cover, the tiny thing opened its eyes and ruffled its feathers exactly as if it had just awakened from a good night's rest, as I think it had.

That day it began flying about. I took it with me from room to room and let it fly at will. In each room it had a certain place for alighting to rest from its flights. In the dining-room, its perch was always the piece of wire cord upon which the other had alighted, and always, it seemed, in the exact spot where it had first rested. In the sitting-room, it always perched upon the frame of a picture over the mantel, and always in the same place on the frame. In my chamber, the mirror frame, always the left-hand corner, was its perch. From



HUMMINGBIRD FEEDING FROM A
MEDICINE DROPPER

these resting-places it would make its humming excursions, pausing to investigate any flowers which might be in the room, or flying about in circles until tired, when it would return to the perch to rest. But, best of all, it loved to have me hold it and talk to it, and it would sit on my palm and look at me exactly as if it understood me. I talked to it so much that it came to know my voice, and would cry loudly if I remained too long silent, ceasing its crying at once when I spoke. If I

left the room, leaving the bird behind, it would cry until I returned, when it would ruffle its feathers and eye me in silence. It was not long before, if I placed my hand beside it on the table, palm upward, it would put its breast against the side of my hand, and, lifting itself and seeming to push with its short tail, would get into my palm and there nestle cosily, looking at my face with its bright little eyes. The problem of feeding the tiny creature had puzzled me for a time. It seemed to me that it could not possibly obtain enough nourishment from the few flowers which it visited, so I made a syrup of sugar and water. Of course, I knew it would not be likely to feed from a saucer, so I hit upon the idea of using a medicine dropper, one of the rubber-bulb sort. Into this I drew some of the syrup and, making a little chirping sound, I held it up. Instantly the Hummer flew to me, and poising, inserted its bill in the dropper and began to eat the sweet fluid, its tiny tongue moving swiftly, projected half an inch beyond the end of its bill, as could plainly be seen through the glass sides of the dropper. I raised my thumb toward the tiny body, when down came the little feet and rested securely upon it. After that, I had only to hold up the dropper, when it would come instantly and perch upon my thumb. In this position I photographed it,

holding my hand against the door, to steady it, while setting off the camera with the other. I also photographed it on my hand, once in its favorite nestling place (my palm), and once on the upturned side of my hand.

The damp, chilly days of late summer and early autumn passed, "and then followed that beautiful season called by the pious Acadian peasants 'the summer of All Saints,'" "I must let my pet go," I said, "so it may rejoin its friends and migrate with them." I took it out into the sunshine and put it on the flowers. It sat, looking at me, looking at the flowers, for some time, then *whiz!* it was gone toward the orchard. Sadly I returned to the house. That afternoon, returning from an absence of a few hours, I was told, "Your Hummer has been on the wire fence a long time. I think it is there now." I went out and easily took in it my hand. After that, every morning, I put it out among the flowers. As long as I stayed beside it, it was content, and flew about trying the different blossoms; but as soon as I attempted to leave it, its little *seep, seep*, called me back. Each day it grew more and more helpless and weak, its flights grew shorter, and soon the inevitable end came. But who shall say that this little life was lived in vain?

The Hermit Thrush

By HENRY LEAR

A disembodied voice in flight,
A clear-toned bell, a haunting knell,
What art thou? Merely bird, or sprite?
Deep coolness of a crystal well,
Dweller in shaded dell.

Is it desire? or passion's fire?
Or sweet content, by Heaven sent,
That sounds from thy elusive lyre?
Of longing infinite, unpent,
Is thy song redolent.

From dark recess of dusky wood,
At eve, thy mystic note is heard,
Responsive to man's changing mood,
His joy, his grief, his hope deferred,
Sung by an unseen bird.

Notes on Cliff Swallows

By KATE P. and E. W. VIETOR

OUR summer of 1911 (from May 10 to August 19) was spent at Orford, N. H., a town well up in the Connecticut River valley.

A large barn facing east, with very deep eaves on the north and south sides, yielded some points of interest relating to Cliff Swallows.

The first pair of birds appeared on May 12, and the number increased until the 25th, when thirty-one nests on the north side and ten on the south side had been begun.

By the 19th, two nests were completed. Nest-building continued until June 13, when seventeen nests were finished on the north side and eight on the south side of the barn; sixteen were abandoned unfinished. Many birds left the colony during the first week in June.

The history of the ten nests begun on the south side of the barn is short, as by June 15 seven had fallen off, and a group of three had been destroyed by one pair of English Sparrows, the first seen about the farm. Appropriating one of the group, they stuffed it to overflowing with straw which, together with their clumsy motions, soon wrecked the three nests.

When building a nest, as soon as it could be occupied, one or both birds usually stayed in it, excepting at such times as the whole colony were away feeding. One object of this close occupancy was probably to retain ownership, as we frequently saw a Cliff Swallow driven away from a nest it was trying to enter. We feel sure, however, that the nest was not merely a nursery, but a home for the birds. Both birds slept in the nest before incubation took place, and later the whole family were often in it at once. Abandoned unfinished nests were often used by a bird at night, while the mate was brooding, we supposed. We think brooding was shared by both birds.

From our observations, the nests do not last from year to year, as only the outlines of last year's nests were on the barn when we arrived, and, at the close of the nesting season, but seven nests remained, and only one of these was in perfect condition. During the time of nesting, several nests were broken, and, when not beyond hope, were repaired with fresh mud. Certain of these repaired nests were left with the openings larger than the original openings, thus affording a fairly good view of the interiors. While gathering mud for the nests, the Swallows raised their wings high over their backs and fluttered them rapidly.

In building the nests, both birds worked together. They began by putting pellets of mud on the barn where the base of the nest was to be. Then they built the base to resemble a very shallow half-cup; they molded this by putting the mud on that already dry, and held it in position with their breasts, clinging to the barn and bracing themselves with their tails. They would remain in this position until the mud had dried sufficiently to adhere. Some-

times one of the birds would remain in the nest during the process, to help in molding. From this base a side would be built to the roof, and then the remaining space was filled in to leave an opening at the top. None of the nests in this colony had "necks." The great majority of the openings were on a line with the middle of the nests. The nests were thinly lined with dry grass.

Building was done irregularly, and, to us, without rhyme or reason as to hour of day or amount of work done—sometimes at 5 A.M., at other times in the afternoon and evening; on June 1, all day. One pair completed the upper half of their nest on this day, but this was evidently too quick work, as the nest soon fell off.

Usually, after a few hours of work there would be a long time of feeding or play.



CLIFF SWALLOWS GATHERING MUD FOR NESTS

The colony contained one group of four nests and three groups of three, all the others were single.

Birds were not raised in all the nests finished on the north side; some fell off, and the English Sparrows alluded to above destroyed another group of three on this side. Broken Sparrow eggs were found in the debris of both groups destroyed by them. After their second failure they left the vicinity.

Mating took place toward the end of May, usually while the birds were gathering mud. The first young birds were hatched about June 12, the last on July 3. The young birds were fed by both parents, and very frequently. At first the birds entered the nests with the food, but after about a week the bills of the little birds were pushed out to receive the food, the old bird clinging to the outside of the nest and bracing itself with its tail. A few days later, the whole head appeared at feeding. After the young birds had left the nest, we sometimes saw the feeding take place on the wing.

While the birds were small, the parent dropped the excrement from the edge of the nest; but, later on, the young bird voided it from the nest.

The young remained in the nest from twenty-one to twenty-four days; nor did they leave the nest altogether for some days after. The first flight lasted not over an hour, and for from two to five nights afterward they slept in the nest with one of the parent birds. While the young were away on these trial flights, the nest was guarded by a parent bird. The last young bird left its nest on July 25, and the last of the colony left the neighborhood on July 27.

Cliff Swallows have a habit of hanging half-way out of the nests, at times, before flying, and this position was assumed by the young birds two or three days before they made their first launch into the air. They also were seen to try their wings in the nests.

We are certain that not more than twenty-six birds were raised in this colony where forty-one nests were begun. The number in a nest varied from one to three. We are certain that two nests had three birds, three nests had two birds, and three nests had but one bird each.

The markings of the young birds are indistinct; they are chiefly different shades of a smoky gray, and the forehead is a very dull, ashy white.

We regret that our data are not more precise, but we were unwilling to destroy nests in order to count eggs. The nests were almost inaccessible, being thirty feet from the ground. Most of our observations were made from a building at right angles with the barn, with a window on a level with the lower edge of the north eave. But few nests could be seen from this point. One nest near the window (finished June 7) had been selected for special observation, but it fell June 19; we were unable to find anything of its contents in the tall grass below. The exceptionally hot and dry season may account for the early falling of so many nests.



Making an Acquaintance: the White-Eyed Vireo

By ALFRED C. REDFIELD, Wayne, Pa.

TO me, the White-eyed Vireo has always been a stranger. Sometimes on my walks I hear his scolding song from the swampy thickets, and catch a glimpse of him as he peers out curiously with his uncanny white eyes in response to my luring *squeak*. Once I found his nest, but it was soon deserted. Thus I have never come to have that feeling of friendship toward him that one has for such birds as the Chippie, the Red-eye, or the Wood Thrush.

When, in mid-May, I heard his song—an explosive, inquiring *te who, whee-a-wit*—in the thicket, I looked forward to the possibility of a better acquaintance. My hopes were not in vain, for on May 27 I came upon the pair, the female diligently building her nest, the male cheering her on with his song, and occasionally rendering material assistance. The nest was a neat cup,

somewhat deeper than the Red-eye's, hung in the crotch of a low branch of spice bush, just where the brambles of the field meet the bushes of the woodland. The next day the familiar song was not to be heard. For several days the birds disappeared from the thicket, and I began to fear that my intrusion had frightened them from their nest. Imagine my delight, therefore, when on June 2, six days after the discovery, I flushed the Vireo from three eggs. Later a fourth egg was laid, just when I do not know, for I was afraid to visit the nest again for some time.

By June 11 the eggs had been incubated for nine days. I decided it was now time to attempt to photograph them. When I approached the nest, the



WHITE-EYED VIREO ON NEST

little mother sat closely, not flying away until I was within four feet of her. Then, as I was carefully focusing my camera, the image of the Vireo appeared for a moment on the ground glass; she had come to see if her eggs were safe, in the very face of the camera. This was an unexpected advance, and so, having secured my pictures, I set up a rude dummy camera within a few feet of the nest, and withdrew.

The following day I returned, and the accompanying picture was made.

Ezekiel

By MAUD JAMISON SELBY, Dixon, Ill.

NOT the prophet priest of sacred history, but a dear little prophet of joy and song, is the Ezekiel of my story.

One lovely Sabbath afternoon, while sitting on the bank of a certain river in a beautiful park, I noticed a young fledgling near-by on the back of a seat. Being always unable to resist getting as near as possible to any member of the feathered family, I quietly approached, expecting at each step to see him flutter away; also to be soundly scolded by his watchful parents. To my surprise, on my coming near, he only opened wide his beak and began begging lustily to be fed, even permitting me to stroke him with my finger, which he soon accepted as a perch. All the time I was expecting the old people to attack me, and soon became quite disgusted at such apparent negligence.

While I was trying to decide whether he were Robin or Jay, a lady came from a cottage near-by in search of her cat. She at once disagreed with my poor opinion of the little fellow's family, and said that he had been kidnapped by thoughtless children, who fed him for a time, then, something proving more interesting, they had forsaken him. She was ready to back her opinion by testifying to having seen some children poking cornmeal and water down the throats of what they called "young Robins."

After waiting about an hour, we decided that the little bird was truly alone in the world, and, while able to fly a few feet at a time, he without doubt had not the slightest idea of any other use for his beak than to open it full size, with perfect confidence that it would be properly filled, if he only chirped loud enough and begged hard enough with his pretty little wings.

Dear little fluff of feathers! He seemed to know from the first that he could coax me into anything. We soon found that the choice must be made between leaving him there, as a meal for kitty, and bringing him home to feed him. This question was no sooner presented than decided, and he was soon adopted and named Ezekiel.

Very soon Zeke, as we more often called him, was the chief attraction in

the home, and his welfare and happiness became of primary importance to one and all.

At first we could not decide to what particular bird family he belonged, not being well versed in bird-lore. His predominating color, at that time, of brown shading to buff, with black and white markings, told us little. Even the quail-like white streaks over his eyes were unfamiliar. He was too large for a Sparrow and too small for a Robin; different in some way from all the birds more common to us. But the rose-pink under his wings, and the one pink feather which soon appeared on his breast, enabled us to place him with the Rose-breasted Grosbeaks, among the most delightful of our American song-birds.

It is doubtful if he would ever have decided that he could pick up his own food, and it took us a full month to find that we must make the decision for him. Indeed, he was fully fledged and singing before he assumed this responsibility. Doubtless we were largely to blame for this tardiness, for it certainly was a pleasure to pet him. In fact, he never outgrew his liking to be given a drink of water, drop by drop, from the finger-tip.

Like all children, he was easily spoiled. When about three months old, we were away from home almost constantly during the afternoon and evening for about two weeks, which, of course, meant that Zeke must stay in the cage during our absence. He evidently thought it but fair that we put in the night entertaining his birdship, and soon found that by beating his wings against the cage he would be taken out. I would keep still just as long as I could, then go to him, each time feeling sure he must have caught wing or foot in the wires, or at least worn off bunches of feathers, only to find him unruffled and coaxing in his irresistible way. Eventually I would present a finger, which was at once accepted; then, not having the heart to force him off, I would lie down to sleep holding him perched on my hand. With a fluff of his feathers, which certainly spoke contentment, he would tuck his head under his wing and fall sound asleep; but needless to say I did not.

I soon found, however, that he must be left alone, at the risk of breaking his neck. After spending a couple of nights listening to his flutter and call, worrying first because he was noisy, then imagining he was dead because he was quiet, and tiptoeing at intervals into the room, only to wake him from sleep, I at last taught him to be quiet all night. It took a still longer time to induce him to go to sleep at dusk, instead of at the family bedtime.

Twilight was his only restless time; then he was always uneasy and lonesome. We were much afraid, at first, it was because he was pining for the outdoor life, but found later, by watching the wild Grosbeaks, that it seemed a characteristic, as they always are the same at this time. He liked, at evening, to have someone sit close to the cage. Then he would cuddle down as near the wires as he could, and, with the usual fluff of contentment, fall sound asleep—not so sound, however, but that he was awake instantly if left alone.

At times, when extremely restless, he was content only to sit cuddled close to my neck or nestled in my hair. This kind of petting was rare, however, for we always avoided, as much as possible, actually touching him, letting him have his way and perch where he chose. He hated to be caught in the hand, and was rarely so insulted, but was good about accepting a finger, even when he knew it was to take him home against his wish. When he wanted to come out of the cage, he would pound on the door with his beak, then fly back on the perch and await the result. If no move were made to take him out, he would repeat it more impatiently. It was a busy day, indeed, if he had to knock many times.

There are those who seem to believe that a bird has no memory, but Zeke proved his memory good in many ways which would have satisfied the most skeptical. At one time, when about two months old, a little friend of ours who called to see him wore a string of coral beads. He was very much like an Indian in his tastes, being extravagant in his admiration of beads, especially red ones; so Marjorie's beads proved more interesting to him than he to her. Almost instantly flitting to her, he began running his beak along the string in search of the fastening, which I knew from my own experience he could very likely open. She took off the beads and hid them, much to his disappointment. About a week later, when Marjorie came in dressed differently and without the beads, Zeke at once recognized her and flew to look for them. He was very unwilling to give up, but searched diligently around the neck of her dress and under her curls.

He always noticed when we wore anything new, and showed very plainly his likes and dislikes. One particular tie which my Aunt wore we called "Zeke's tie," because he was not content a minute while she wore it unless he could be touching it. He would run his beak gently along the edge of the silk, which was one of his ways of caressing, and plainly show his admiration.

He seemed to think he belonged especially to me, and though he loved all the family, was more content to have me near, and on my return from a few weeks' absence would be wild with delight.

Zeke loved to bathe, but the breaking of his bathing-dish, at one time, caused us much trouble, as he positively declined to accept another. To make matters worse, someone attempted to bathe him forcibly, and he seemed then to vow "never again." Finally, by much coaxing and splashing of the water, he was tempted in; but, dear me! this led to more trouble, for he found it great fun to splash the water on his unwilling assistant. The minute said victim dared withdraw the hand from the dish he was out and onto her shoulder, to begin the drying process by shaking off the water, much or little, from his feathers.

We often wondered if he would be happier to have his liberty, but it did not seem safe to give it, since he was unused to the wild life; for he was more afraid of his own kind than anything else, cats included. He was even fearless

enough to alight on the back of our little dog, and impudently peck him on the nose, much to the disgust of the dog.

We tried taking him outdoors a few times; but he would leave his perch on finger or shoulder only long enough to get a bug and fly back to share it. The risk was seldom taken, for fear of some lurking cat.

Not one of us would have kept him a day had we been convinced that he could be happier outside, but we felt sure he would never live to learn wild ways. Surely no one ever saw a more happy, joyous little creature than he was with us. Interested in everything, and singing more beautifully than any who have not been privileged to hear a Rose-breasted Grosbeak sing can imagine, he was the embodiment of joy.

For more than three years he brightened our lives and home. No one who knew him but has loved all nature more and been kinder to all living things. More than one woman who saw him has ceased to admire the dead birds on hats. Surely his mission in life was well fulfilled.



VEERY ON NEST
Photographed by J. M. Schreck

The Migration of North American Sparrows

SIXTEENTH PAPER

Compiled by Professor W. W. Cooke, Chiefly from Data in the Biological Survey

With Drawings by LOUIS AGASSIZ FUERTES

(See frontispiece)

BLACK-HEADED GROSBEAK

The Black-headed Grosbeak breeds from southern Mexico to southern British Columbia and from the Pacific east to Nebraska. It winters in the southern quarter of its breeding range, so that the southernmost breeding birds are almost non-migratory, while the British Columbia birds travel back and forth about two thousand miles.

SPRING MIGRATION

PLACE	Number of years' record	Average date of spring arrival	Earliest date of spring arrival
Los Angeles, Cal. (near).....	9	April 5	March 23, 1907
Berkeley, Cal. (near).....	7	April 16	April 10, 1889
Huachuca Mountains, Ariz.....	2	April 24	April 20, 1902
Carlisle, N. M.....	2	May 6	May 4, 1890
Denver, Colo.....	3	May 6	May 2, 1897
Beulah, Colo.....	7	May 9	May 2, 1908
Colorado Springs, Colo.....	7	May 13	May 4, 1906
Yuma, Colo.....	5	May 13	May 2, 1904
Salt Lake City, Utah.....			May 12, 1909
Cheyenne, Wyo.....			May 19, 1889
Grangeville, Idaho.....			May 16, 1887
Fort Custer, Mont.....			May 14, 1885
Great Falls, Mont.....	4	May 23	May 20, 1891
Columbia Falls, Mont.....	2	May 26	May 25, 1895
Red Bluff, Cal.....			May 1, 1886
Portland, Ore.....	5	May 5	April 28, 1889
Tacoma, Wash.....			May 20, 1904
Chilliwack, B. C.....	3	May 14	May 9, 1880

FALL MIGRATION

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Yuma, Colo.....	3	August 29	September 20, 1906
Beulah, Colo.....	6	September 4	September 11, 1910
Los Angeles, Cal.....	4	September 17	September 22, 1896
Huachuca Mountains, Ariz.....			October 16, 1902
Silver City, N. M.....			November 13, 1883

ROSE-BREASTED GROSBEAK

The Rose-breasted Grosbeak winters in Central and South America, and breeds from Kansas, Missouri, Ohio and New Jersey northward, while in the

mountains it breeds south to northern Georgia. It is the latter fact which explains the migration dates in North Carolina. The species arrives near Asheville in the mountains, where it breeds, nine days earlier than at Raleigh in the lower land, where it does not breed. Other birds, that breed at both places, always arrive earlier at Raleigh.

The Rose-breasted Grosbeak is also a good example of what is almost a general rule, that birds migrate earlier in the Mississippi Valley than at corresponding latitudes on the Atlantic slope; it arrives at Beaver, Pa., four days earlier than at Washington, D. C., more than a hundred miles further south.

Another striking peculiarity in the migration of this bird is that there are no dates of arrival on the Gulf coast of Louisiana and Mississippi to correspond in earliness with those of Missouri and Illinois. The facts seem to be that the early migrants—fully adult and strong-winged birds—fly across the Gulf of Mexico and far inland, over Louisiana and Mississippi, before they alight; and it is only the later, younger, and weaker birds, or occasionally stronger birds buffeted by a tempest, that are noted near the coast.

SPRING MIGRATION

PLACE	Number of years' record	Average date of spring arrival	Earliest date of spring arrival
Bermuda.....			April 15, 1850
Northern Florida.....	2	April 12	March 25, 1901
Atlanta, Ga. (near).....	7	April 25	April 18, 1902
Asheville, N. C. (near).....	7	April 20	April 15, 1893
Raleigh, N. C.....	8	April 29	April 23, 1909
French Creek, W. Va.....	4	May 1	April 28, 1890
White Sulphur Springs, W. Va.....	4	May 5	April 30, 1897
Washington, D. C.....	18	May 5	May 1, 1907
Beaver, Pa.....	11	May 1	April 24, 1889
Renovo, Pa.....	14	May 5	April 27, 1908
Germantown, Pa.....	3	May 5	May 4, 1884
Williamsport, Pa.....	6	May 7	April 29, 1897
Morristown, N. J.....	11	May 3	May 1, 1907
Englewood, N. J.....	12	May 6	May 1, 1886
New Providence, N. J.....	11	May 8	May 4, 1892
Ithaca, N. Y.....	6	May 6	April 30, 1900
Flatbush, N. Y.....	8	May 7	May 5, 1890
Ballston Spa, N. Y.....	14	May 10	May 4, 1906
Portland, Conn.....	6	May 5	May 1, 1891
Hartford, Conn.....	17	May 7	May 4, 1909
Jewett City, Conn.....	10	May 7	May 4, 1905
Providence, R. I.....	12	May 9	May 3, 1905
Boston, Mass.....	6	May 9	May 6, 1906
Beverly, Mass.....	11	May 12	May 10, 1904
Randolph, Vt.....	7	May 12	May 8, 1887
St. Johnsbury, Vt.....	12	May 10	May 6, 1906
Charlestown, N. H.....	5	May 12	May 9, 1904
Phillips, Maine.....	5	May 13	May 9, 1905
Pittsfield, Maine.....	4	May 17	May 15, 1896
Montreal, Canada.....	4	May 17	May 14, 1890
Quebec City, Canada.....			May 14, 1903
Scotch Lake, N. B.....	7	May 23	May 19, 1908
St. John, N. B.....	2	May 25	May 24, 1891

SPRING MIGRATION, continued

PLACE	Number of years' record	Average date of spring arrival	Earliest date of spring arrival
Helena, Ark.....			April 27, 1904
Athens, Tenn.....	7	April 24	April 20, 1909
Lexington, Ky.....	4	April 27	April 24, 1904
St. Louis, Mo.....	8	April 24	April 20, 1885
Quincy, Ill.....	3	April 23	April 19, 1887
Carlinville, Ill.....	4	April 27	April 20, 1891
Rockford, Ill.....	9	May 1	April 28, 1888
Chicago, Ill.....	21	May 3	April 25, 1901
Bloomington, Ind.....	6	April 30	April 23, 1886
Fort Wayne, Ind.....	6	April 30	April 23, 1908
Waterloo, Ind. (near).....	11	May 2	April 28, 1896
Wauseon, Ohio.....	13	April 30	April 24, 1886
Youngstown, Ohio.....	6	May 1	April 27, 1908
Oberlin, Ohio.....	11	May 2	April 27, 1896
Sandusky, Ohio.....	12	May 3	April 27, 1902
Ann Arbor, Mich.....	16	May 1	April 23, 1889
Petersburg, Mich.....	12	May 1	April 27, 1888
Battle Creek, Mich.....	10	May 2	April 24, 1889
Bay City, Mich.....	3	May 5	May 2, 1896
Palmer, Mich.....			May 8, 1895
Houghton, Mich.....	3	May 20	May 17, 1908
St. Thomas, Ontario.....	5	May 8	May 7, 1885
Strathroy, Ontario.....	11	May 8	May 3, 1890
Kearney, Ontario (near).....	8	May 12	May 8, 1901
Ottawa, Ontario.....	20	May 13	May 8, 1886
Hillsboro, Iowa.....	5	April 26	April 22, 1896
Keokuk, Iowa.....	15	April 29	April 24, 1896
Davenport, Iowa (near).....	19	April 29	April 24, 1896
Sabula, Iowa.....	10	April 29	April 24, 1897
Iowa City, Iowa (near).....	12	April 30	April 26, 1889
Fairfield, Iowa.....	10	May 1	April 28, 1899
North Freedom, Wis.....	4	April 29	April 27, 1904
Madison, Wis.....	15	May 4	April 23, 1898
Ripon, Wis.....	7	May 10	April 28, 1897
Lanesboro, Minn.....	9	May 4	April 27, 1888
Minneapolis, Minn.....	9	May 5	May 2, 1905
Elk River, Minn.....	8	May 7	May 3, 1887
White Earth, Minn.....	4	May 16	May 12, 1880
San Antonio, Tex.....			April 24, 1890
Onaga, Kan.....	14	May 2	April 26, 1891
Southeastern Nebraska.....	13	May 1	April 20, 1894
Northeastern North Dakota.....	11	May 16	May 11, 1908
Aweme, Manitoba.....	16	May 16	May 12, 1904
Shell River, Manitoba.....			May 10, 1885
Indian Head, Sask.....	5	May 22	May 12, 1906
Osler, Sask.....			May 17, 1893
Edmonton, Alberta.....	4	May 19	May 15, 1897
Fort McMurray, Alberta.....			May 29, 1903
Slave River, Mackenzie.....			June 8, 1901

SPRING MIGRATION

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Pedregora, Venezuela			April 8, 1903
Valparaiso, Columbia			March 29, 1899
Whitfield, Florida			May 15, 1903
Lynchburg, Va.	2	May 10	May 11, 1908
Washington, D. C.	6	May 16	May 30, 1907
New Orleans, La. (near)	4	May 2	May 6, 1897
Rodney, Miss. (near)	4	May 1	May 8, 1890
Helena, Ark.			May 10, 1904
Athens, Tenn.	7	May 12	May 17, 1903
Bolivar Point, Tex.			May 7, 1902

FALL MIGRATION

PLACE	Number of years' record	Average date of fall arrival	Earliest date of fall arrival
Palm Springs, Cal.			September 10, 1897
Athens, Tenn.	4	July 10	July 1, 1906
Washington, D. C.	2	August 30	August 29, 1887
Kirkwood, Ga.	4	October 5	September 26, 1899
Tallahassee, Fla.			September 6, 1896
Key West, Fla. (near)	2	October 6	October 4, 1887
Bermuda			October 9, 1849
Havana, Cuba			October 13, 1844
Watlings Island, Bahamas			October 20, 1891
San Jose, Costa Rica			October 23, 1889

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Aweme, Manitoba	14	September 5	September 19, 1909
Lanesboro, Minn.	5	September 19	October 27, 1886
Ripon, Wis.			September 25, 1906
Keokuk, Iowa	6	September 19	September 29, 1901
Ottawa, Ontario	3	September 15	October 1, 1908
Detroit, Mich.			October 5, 1905
Wauseon, Ohio	8	September 23	October 4, 1897
Cleveland, Ohio			October 7, 1885
Waterloo, Ind. (near)	3	September 23	October 8, 1887
Fort Wayne, Ind.	3	September 27	October 1, 1906
Chicago, Ill.	10	September 24	October 27, 1906
St. Louis, Mo.			October 18, 1906
Athens, Tenn.	6	October 9	November 26, 1905
Southern Mississippi	2	October 17	November 5, 1882
Scotch Lake, N. B.	3	August 28	September 7, 1904
Montreal, Canada	3	September 20	September 23, 1911
Phillips, Maine	5	September 5	September 3, 1904
Randolph, Vt.			September 14, 1887
Providence, R. I.	3	September 21	September 24, 1904
Hartford, Conn.	6	September 26	October 6, 1895
Morristown, N. J.	4	October 6	October 10, 1906
Renovo, Pa.	8	September 24	October 8, 1908
Beaver, Pa.	4	September 28	September 30, 1907
Germantown, Pa.	4	October 1	October 6, 1888
Washington, D. C.	6	September 23	October 6, 1907
Weaverville, N. C.	3	October 17	October 25, 1894
Kirkwood, Ga.	2	October 19	October 20, 1903

Notes on the Plumage of North American Sparrows

FIFTEENTH PAPER

By FRANK M. CHAPMAN

(See frontispiece)

Black-headed Grosbeak (*Zamelodia melanocephala*. Figs. 1-3). The plumages of this species are not so interesting as those of the Rose-breasted Grosbeak. Both sexes have the under wing-coverts the same color, the yellow being just as bright in the female as in the male. The juvenal plumage of the male closely resembles its first winter plumage (Fig. 3), which, as in the Rose-breasted Grosbeak, is gained by molt of the body feathers and wing coverts, the tail and wing-quills being retained. The spring molt, also, appears to agree in extent with that of the Rose-breast; only the primaries, their coverts, the secondaries and some of the tail-feathers of the first winter plumage (Fig. 3) being retained. With the exception of these feathers, the bird, now in first nuptial plumage, resembles the fully adult male (Fig. 1), but is paler below and has the belly with more white.

At the postnuptial or fall molt, this plumage is followed by the second winter plumage, which doubtless resembles that of the adult. This differs from the adult summer plumage only in being widely margined, with rusty above and with buffy below.

Rose-breasted Grosbeak (*Zamelodia ludoviciana*. Figs. 4-7). This species undergoes a most interesting series of plumage changes which are well represented in our plate. The male juvenal plumage resembles that of the first winter (Fig. 4), but is whiter below and shows no pink on the breast. The wings and tail of this plumage are retained at the postjuvenal molt, but the body feathers and the wing-coverts are molted, and the bird thus passes into first winter plumage (Fig. 4). This, as will be seen, closely resembles that of the female, but the under wing-coverts are rose-pink, not saffron, as in the female, and there is usually at least a trace of pink on the breast. (The specimen figured shows rather an exceptionally strong pink tinge.)

The following spring, all of this plumage, except the primaries and secondaries and the primary coverts, is lost by molt, and the bird appears in a plumage essentially like that of the adult (Fig. 5), but for the brown primaries and secondaries; and there are usually black spots on the rosy breast, while the throat is less solidly black. This plumage is therefore not unlike that of the adult male in winter (Fig. 6), but the throat is blacker. It is, however, subject to much variation. At the postnuptial molt, this first nuptial plumage is, as usual, completely molted, and is followed by that of the adult in winter (Fig. 6). The full, mature breeding plumage is not therefore acquired until the second spring, when, by partial molt and some wear, the bird shown in Fig. 6 acquires the plumage represented by Fig. 5.

The plumage of the female is deeper, more buffy, in winter than in summer, but in its main features is alike at all seasons and all ages.

Notes from Field and Study

Pine Siskin in Trenton, N. J.

On Sunday, March 31, while exploring an old field near the edge of the water-power, which runs through a section of the city, the writer was agreeably surprised to observe six Pine Siskins making a repast on the seeds of weeds. On several previous visits to this same field, flocks of the American Goldfinch were seen, and it was in quest of this bird that my visit on the morning of the 31st was made.

With a feeling of pleasure more vivid than might be aroused by many a songster in May, I made a note of this irregular individual in my field-book. It has been some time since this little bird of the North has paid us a passing call.—
WILLIAM M. PALMER, *Trenton, N. J.*

Where Are the Bluebirds?

I have observed no Bluebirds since late February, and I am receiving reports from other observers to the same effect. They were in evidence last fall and well into December, and at different times during the winter I observed the birds in this locality, the northern margin of their winter habitat.

There are no Bluebirds at the numerous houses in and about this town, in which they have reared broods in previous years, and indications point to the destruction of the birds throughout eastern United States during the past winter. The winter was one of great severity everywhere, with conditions similar to those of 1895, when the Bluebirds were almost exterminated. — J. WARREN JACOBS, *Waynesburg, Pa.*

A Woodcock's Nest

On April 2, 1911, an old colored wood-cutter informed me that he had found "a Whippoorwill's nest." Thinking this rather an early date for this bird to be nesting, as it was only about time for its

spring arrival, I was eager to find out what sort of a nest it was. He led me to it, and we found the bird sitting quietly on it; but I had to look close to see her, as her colors harmonized so perfectly with the surrounding pine straw and leaves. I readily recognized the bird as a Woodcock.

The nest had been placed near the base of a pine tree, about twenty-five yards from a stream of water, bordered by a reed-grown marsh. There were scattering pines and cedars about the nest, also a small amount of broom-sedge and weeds.

The bird allowed us almost to touch her, before taking wing suddenly and flying out of sight. In the nest were four rather large eggs for the size of the bird. They were brownish buff in color, rather thickly spotted with yellowish brown and lilac, making them quite inconspicuous.

Before the nest was discovered, the old man had cut down the pine tree which stood about eight feet from it, along with a number of other trees. He said that the bird did not fly off the nest until the tree fell, but allowed him to chop the tree down almost over her. The tree was then cut into firewood, but the bird returned, appearing not to be disturbed.

About 9 A.M., on April 9, I visited the nest, and found the bird on it as before, with her long bill resting on the pine straw and her big, bright eyes staring at me in wild excitement. This time she flew off over the ground, feigning to be lame. The eggs had evidently just hatched, for two of the chicks were not yet thoroughly dry. I concealed myself in a brush-blind which I had constructed, and waited two hours, but the old bird did not return.

I visited the nest again about four o'clock that afternoon, and found it empty. I had searched for some time, in hope of finding the birds, when I heard a weak, high-keyed *peep*. I walked around the spot whence the sound seemed to come, searching the ground carefully. Suddenly the old bird flew up almost under my

feet. There were the four downy chicks about twenty feet from the nest. In color they were black, marked with soiled white. They were weak and seemed hardly able to hold up their large bills.

I examined the old nest. It was in a slight depression in the ground, about four inches in diameter and an inch deep, and it was composed almost of pine needles. The whole mass was probably a foot in diameter, hollowed out in the middle, to form a nest about four inches in diameter and an inch deep inside.

—MERRIAM G. LEWIS, *Lawrenceville, Va.*

Pine Grosbeaks in August

Confirming the report of B. Franklin Pepper, in the November-December number of *BIRD-LORE*, the writer observed the Pine Grosbeak in considerable numbers on Long Island, and at Casco Bay, Maine, during the month of August, 1911. They frequented the tops of the taller fir trees, and sang merrily during long periods in the afternoon. On one occasion, one of them sang for a long time in the early morning near my hotel window.—H. H. CURTIS, *Montreal, Canada.*

Florida Notes

We own a home on Ridgwood Avenue, in the very heart of the city of Daytona, Florida. The lot has about one hundred and fifty feet frontage and four hundred feet depth, and contains a number of large live oaks, covered with Spanish moss, and palmetto, mulberry, and large magnolia trees, and about one hundred orange and grapefruit trees, with three deep wells with running water,—thus making it an ideal home for many different kinds of birds.

The Hermit Thrush, Catbird and Robin were continually about our doorstep, and the different kinds of trees and shrubs attracted many varieties of birds.

One day a friend brought a small Florida Screech Owl to me alive. After examining it for awhile, we let it go, and it flew into a near-by mulberry tree. At once there

was a commotion in the bird colony on the place, and we counted at least fifty birds attacking or talking very loud to the Owl. There were thirteen species, viz: Blue Jay, Brown Thrasher, Catbird, Hermit Thrush, Blue-Gray Gnatcatcher, Carolina Wren, Bewick's Wren, House Wren, Florida Grackle, Robin, Flicker, Red-bellied Woodpecker and Mockingbird.

The gray squirrels were numerous, and it was an amusement to throw them peanuts, and have a Blue Jay or a Grackle swoop down to the ground and get the nut before the squirrel could reach it. We tamed these squirrels and Blue Jays so that they would take the nuts from our hands, and it was interesting to watch their steady approach in short stages to our hands, to reach the coveted nut.

Daytona was favored, in February, by a visit from Professor Henry Oldys, who was sent there by the U. S. government, to inspect the government bird reservation at Mosquito Inlet, and we had the pleasure of listening to one of his interesting bird talks.

Among other things, he said that of the fifty-six United States government bird preserves he knew of none that had more possibilities before it than the Mosquito Inlet preserve. As this preserve comes up to the city lines, and as the city ordinance does not permit any gun-firing within the city limits, this bird reservation practically extends almost to Ormond. As a result, you can stand on the main business street of the city opposite the post-office, facing the Halifax river, and feed the Bonaparte Gulls, Royal Terns, Herring Gulls, and Scaup Ducks that will come up close to you. It is strange how soon these birds know they are in a protected zone. Until the establishment of this government preserve, such a thing as a wild bird in the river, within shooting distance, was a rarity, and now Pelicans and many varieties of Gulls, Terns, and Ducks can be seen both in the river and along the ocean shore with large flocks of Snipe and Herons of different kinds. I counted about seventy different species of birds during my stay in February.

We found the Red-bellied Woodpecker very destructive to our oranges, boring holes in both green and ripe fruit; but the most remarkable thing of all was the tameness of what to us had hitherto been the shyest of all birds, viz, the Hermit Thrush. Here he was so tame that he would hardly get from under our feet, while we had hitherto known him only in his Adirondack home, where he could seldom be heard and more rarely seen.—WM. M. STILLMAN, *Plainfield, N. J.*

Wrens in Our Garden

Several years ago, we hung a gourd in our syringa bush. The door was just the size of a silver dollar, to let in Wrens and keep out English Sparrows.

The first spring it was left empty. The second, when blackened by winter and coal soot, a pair of Bewick's Wrens took possession, and raised two broods that summer.

The man of the house says that Bewick's Wren has the spring-iest song he knows.

While feeding their young, the old birds seemed very tame, and went back and forth to the nest when we were sitting only three or four feet away. They rarely flew directly to the nest, but lit on a tall branch above, and then climbed down as if going down a ladder. There were seven in the second brood.

We were so pleased with this success that, in the fall, three more gourds were hung. But alas for our hopes! When spring came again, Mrs. Wren came back to her old apartments, threw out the old nest, played around for a few days, then left for parts unknown.

Some House Wrens moved in and stayed a few days, but they too left; so we thought we should have no Wrens this year.

Two of the gourds were hung in vines on the house. July 5, a pair of House Wrens moved into one of these, and for a day or two seemed about to build a nest. After that we could not be sure whether Mrs. Wren was there or not. The nest was too high, but we heard singing

and scolding in the garden, and hoped she was.

Finally, early one morning, the old ones were seen feeding the brood. After that they kept things lively in the garden. It was amusing to see the old birds come to the nest. They never flew straight to it, but usually hopped along the garden walk to the fence post, and climbed up the post, flying from the top to a perch above it, then to the edge of the nest. They never once missed lighting on the edge of the hole until the little ones got big enough to poke their heads out in the way; then a perch was put up for them to rest on while feeding. Both birds were in sight when the perch was put up, but they did not seem to mind, and flew right upon it as if it had always been there.

In ten days the little brood was gone, and we expected to see no more of the Wrens. During the hot weather we had our supper in the garden. One evening, as we sat at supper, a House Wren came over the fence, scolding noisily. To our great surprise, he flew right into a gourd in the syringa bush, one never used for a nest. Since then we have frequently seen him go to roost there, between six o'clock and half-past, and do not doubt that he goes every night. Once he brought another Wren; hopped into the gourd, hopped out again, all the time chirping in a soft persuasive note new to us. But no, she would not go in, and he flew off with her.

Once he went in without any noise, but usually he chirps loudly, as if he said: "Look at me! I'm going to bed!"

Now we are wondering how many gourds will have nests this spring.—LIZZIE A. LYLE, *Lexington, Ky.*

Winter Robins in Wisconsin

January, in Wisconsin, broke all records for cold, and the winter as a whole has been equaled or exceeded by only five winters in the forty-two years that the weather records have been kept. Against this chilly background it is interesting to place the Robin record of the winter. Robins were reported from over thirty

localities in the state, and by several persons in most of these places. In most of the places the Robins were reported as appearing to be well and happy. In Milwaukee, about the middle of January, three Robins were found dead with no signs of violence. They were believed to have died of cold or starvation, or both. One of these was received by the writer January 17. It was in good feather, but the body was emaciated. A Robin was received from Baraboo, January 28, that had been shot by a farmer near that city. It was one of a small flock that was seen feeding on frozen apples. It was shot to settle a dispute as to whether it was a Robin or a Pine Grosbeak!

Robins were reported from the following places: Appleton, Baraboo, Barron, Beloit, Cedarburg, Cottage Grove, Eau Claire, Elkhorn, Gay's Mills, Golden Lake, Green Lake, Hartland, Hillsboro, Kendall, La Crosse, Lake Geneva, Lodi, Madison, Manitowoc, Maribel, Mayville, Milwaukee, Muscoda, Prairie du Sac, Reedsburg, Richland Center, Town of Richmond, Wauwatosa, Westfield, Whitewater, Williams Bay, and Winneconne. Eighty-one per cent of the reports were made during the very severe weather of January and February. As there was an abundance of fruit, such as wild grapes, hawthorns, wild crabs, woodbine, viburnum, mountain ash, bittersweet, sumac, and the like, and a good crop of seed fruits, the inference is that the abundance of food enabled the Robins to stay in spite of the weather.—I. N. MITCHELL, *Milwaukee, Wis.*

Records from London, Ont.

On the morning of May 22, 1911, while looking for birds in a small tract of woods about four miles west of London, our attention was drawn to a series of strange notes. We quickly pushed our way through the bushes, and were very much surprised, as well as delighted, to find that their author was a Yellow-breasted Chat. He sat in plain view on the top of a small bush, and we observed him through our glasses at short range for some time. We

were not able satisfactorily to settle the question of whether he had a mate or not, but at least one bird was seen on several different occasions during the summer. I believe this is the first record of the Chat for our vicinity.

The bird lovers of London were favored with visits from three rather rare species in the year 1911. A Cardinal spent the winter with us, taking up his quarters right in the center of the city. A flock of some seventy-five Evening Grosbeaks were here for a week or two in March, the Chat above mentioned making the third.

We hope we may see them all again during 1912, but perhaps that is expecting too much.—C. G. WATSON and MELVILLE DALE.

Notes on the Pine Warbler and House Wren

The Pine Warbler, while common in migration, is a rare and local summer resident in central New Hampshire. With the Myrtle Warbler it shares the honor of being the first Warbler to arrive in spring. The earliest date was April 18, at which time the snow was yet deep in the woods. Although the Pine Warbler usually finds its food among the thick branches of the pines, on one occasion I saw one fly out and take an insect on the wing. Two or three pairs breed every summer about Tilton. Until this year, I had heard only one song from the bird. On June 19, in a grove of red pines, I found a Pine Warbler singing as it moved in its sluggish manner through the branches in search of food. At first it gave only the sweet, unbroken trill so characteristic of the bird. Soon, however, it changed to another song. This closely resembled the *chippy-chippy-chippy* of the Chipping Sparrow, but was clearer and sweeter, just as the trill was clearer and sweeter than the Chippy's trill. I remained in the grove for some time, but while I was there the bird did not return to the more common song.

About Tilton, the House Wren is also a rare and local summer resident. Up to 1904, a few pairs were found about the

village every summer. Since that year, however, the bird appears to have been absent. When I arrived in Tilton, this summer, I was surprised to find a pair of Wrens nesting in an apple orchard in the village. The male was in full song at all hours of the day, even during the hot wave of the first week of July. As the summer passed, he seemed to lose his joyous spirits, and the song was given less freely. The date on which the song was heard was the morning of August 13, when only a few notes were given. What brought back the Wrens after so long an absence I do not know, and I shall wait with interest to see if they will appear again next year.—EDWARD H. PERKINS, *Tilton, N. H.*

Blue-Gray Gnatcatcher near New Rochelle, N. Y.

We wish to report the occurrence of a Blue-Gray Gnatcatcher, in New York State, about two miles from this village. We saw this bird at seven o'clock on the morning of May 3. We were first attracted by its call, and soon saw it near the top of a large tree. We quickly identified it—its small size, slender build, blue-gray upperparts, and grayish white underparts, its black tail with white outer feathers, its note, and its habits, all contributing to make our identification positive. The bird was very active, flitting about among the upper branches, and now and then darting out into the air after passing insects. Though there were several Warblers—Blue-winged, Chestnut-sided, Black and White and Redstarts—in the neighboring trees, it seemed to be alone, rather than in company with these birds.—RICHARD L. BURDSALL, SAMUEL N. COMLY, JAMES C. MAPLES, W. BOLTON COOK, *Port Chester, N. Y.*

1911 Bird Notes from Long Beach, L. I.

In company with various bird students of New York City, I continued my observations at this very favorable station, and trust that the following may be of some interest to readers of BIRD-LORE.

During the past year, I made thirteen visits, and observed 87 species of birds. The biggest list for one day was on May 17, when Mr. George E. Hix and I observed 41 species. The most interesting fact which has developed as a result of my work afield at this locality during the last four years is the increasing abundance of Ducks and shore-birds, due, doubtless, to the abolition of spring shooting. It is also worthy of note that during the last two years the spring has yielded much better results than the fall; both orders being represented by more species, as well as in greater numbers. Thus twelve kinds of Ducks were observed in March, as against eight in November; and, although the number of species of Shore-birds seen in August was only two less than that observed in May, yet the number of individuals was much smaller. Although absent in Europe during August, I have this last information from Mr. C. H. Rogers, who visited Long Beach with me in May. In concluding these remarks, I may say that every species noted below was identified with powerful binoculars, and seen by more than one observer, and every attempt was made to be accurate.

January 8.—Fox Sparrow, 1; Robin, 1.

March 12.—Redhead, 2; Prairie Horned Lark, 1.

March 26.—Mallard, 1; Lesser Scaup Duck, 2; Snowflake, 3—a very late date.

April 23.—Piping Plover, 4.

May 17.—Laughing Gull, 1—a fine adult bird at close range; Hudsonian Curlew, 13—(oddly enough, a flock of twelve was twice observed in May, 1910, in exactly the same place)*; Short-eared Owl, 1—a late date.

May 28.—White-rumped Sandpiper, 1 (a broken wing permitted a very near approach); Black-bellied Plover, 150; Turnstone, 130. The last two species I give, not for their rarity, but for the very unusual numbers. There was a flock of 104 Turnstones, by actual count, on Point Lookout—a very fine sight.

May 30.—American Scaup Duck, 1.

**Vide BIRD-LORE* Nov.-Dec., 1910, p. 247.

October 20.—Sanderling, 62, —a large number for this date. Almost every bird was maimed or wounded in some way, the majority with a broken wing, and a few minus a leg. Ipswich Sparrow, 1,—my earliest date of arrival.

November 7.—Pectoral Sandpiper, 1; Piping Plover, 2. This is by far the latest record for Long Island, the average date of departure being early September. Dr. W. H. Wiegmann, Messrs. C. H. Rogers and S. V. LaDow, and I obtained excellent views of these little birds, which, with their characteristic tameness, permitted a very close approach. They were not disabled in any way.—LUDLOW GRISCOM, *New York City*.

The Birds of Little Elk Cañon

In the southwest corner of South Dakota lies the beautiful Black Hills country—beautiful, even now, though stripped of its forests and robbed of its gold; strangely wild and beautiful in the old days when clothed with the forest primeval—a garment which softened its startling outlines and tempered its crystalline daylight.

In the early '80's, my father located in a wild cañon known as Little Elk, a tract of timber, and, erecting a rough house there, removed his family thither.

It is a rare experience to a nature lover to be the "first who ever burst" into, or at least inhabited, a new country. To give the wild creatures their first impression of humanity is a privilege and a responsibility. That they make perfectly logical and intelligent response to this impression is unquestionable.

The forest was pine—open, parklike, with no undergrowth, the climate very dry. Birds, at first, were comparatively few, though, in a few years the favorites of civilization followed settlement. During our first summer, occasional flights, twitterings in the tops of trees, the melting notes of the Water Ouzel at sunset, the Mourning Dove from the hollows of the hills, the Meadow Lark, and the Poor-will, with a few others, kept bird thoughts

alive in our minds. It was with the first snowfall that birds came down and dwelt among us. The dry Arctic snow lay heaped upon every feature of the landscape. The world was buried.

Touched by the petitions of a chilly Junco or two at the kitchen door, we swept clean the broad front porch and scattered there a few seeds and crumbs. Lo! we had inaugurated a custom that was to endure for fifteen years. During all those fifteen winters, our porch was alive with the flutterings of birds—the woods about vocal with their twittering conversation.

Juncos, Nuthatches, Chickadees, Rocky Mountain Jays—these were our permanent boarders. Crossbills, Cedar Waxwings, dark blue Jays and Magpies, all these in flocks were transients on the place, but never frequented the porch. All of our porch boarders wore grays, or black and white—true little winter birds. From the dining-room window we watched them—the family kitty among us, most interested of all. Little by little we learned and catered to their tastes.

The Rocky Mountain Jays, aggressive, noisy, omnivorous, beautiful creatures, were our chickens, and obligingly devoured anything and everything set before them as long as the big mouthfuls lasted. The little birds hung back before the onslaught of the Jays, but came in for their innings later, when only crumbs and seeds remained.

The Juncos dined daintily on seeds from the Canaries' cages, and millet, which was one of the crops of the country. The Nuthatches, funny little mouselike creepers, loved crumbs and meat, and toiled ceaselessly all day up and down the bark-covered piazza, tucking away their treasures.

The Chickadees were meat-eaters primarily. All winter, meat-bones hung for their edification ornamentally along the eaves. On these they swung and picked, and between them and the trees made their quick, darting rushes punctuated with bright, sharp queries and observations. Marrow-bones were the best of all. In

and out of these they chased one another endlessly dining as they went, and, in return, on every blue winter day that held a hint of coming spring, they soared to the tops of the slender pines and dropped us the languishing Phoebe notes that we always paused to catch.

Often into the busy concourse on the porch dropped Bunny, the red squirrel whose home was in the roof—dropped, and held autocratic sway until his hunger was appeased.

And, once in a great while, came a Hawk like a bolt from the sky, and seized a living morsel that made neither outcry nor defense.

On the winter nights, the Owls sung oratorios through the frozen forest. Bass and tenor, soprano and all, came in at their own sweet will, and the little day birds listened and cowered.

Just what is the use of feeding the birds? Why not let Nature take its course? It is hard to say, yet happy the child who has had the experience with the little tender, cheery, spirit-things. He is a better child I'm sure.—ALICE DAY PRATT, *New York City*.

A Day's Water-fowl Migration in South Dakota

The northward flight of water-fowl always attracts attention. It is in the northern Mississippi basin that such flights are most notable. Perhaps fifty years ago, Illinois and Iowa excelled, but it seems that now eastern Dakota is the the region most favored in this regard. The water-birds follow up the Missouri Valley, and the Dakota (James) valley, which extends north into middle North Dakota almost to Devil's Lake. This region, though flat in its general features, has thousands of small, shallow, glacial lakes and ponds which afford much-used stopping-places. Corresponding depressions in the more populous states are either drained, or so extensively hunted as to be comparatively unavailable for large numbers of game-birds.

It was my good fortune to spend a few

days, early in April, 1912, at the family home, which is situated on a bluff between, and overlooking, the Dakota valley and a pair of fair-sized glacial lakes. April 4 was such a notable day that I am tempted to endeavor to describe it.

The winter had been long and severe. Birds did not come in abundance until March 30. By April 4 ice had almost disappeared; a little green grass could be seen; the earliest prairie flowers (*Peucednum* and pasque flower) were just appearing; wheat-seeding had commenced; a warm south wind prevailed.

Throughout the day, from sunrise to well into the night, flocks of Ducks, Geese and Cranes passed. Only for short intervals would an examination of the sky not reveal one or more northward-flying bands.

The Sandhill Crane is one of the most conspicuous birds of the prairie region, and every farmer's boy knows its unsurpassed call of rich, bugle-like notes. Flocks ordinarily of about twenty individuals, were seen soaring at great heights and drifting northward, or flying lower in a more or less direct line. During the day more than a dozen flocks were seen, and in the evening many were heard to pass in rapid succession, indicating that in the darkness soaring is replaced by direct flight.

Four flocks of scores, or hundreds, of silent, silvery Snow Geese were seen. Three were of the Lesser, and one of the Greater. In two of the flocks, two or three dark, immature birds contrasted sharply with the white adults. A half-dozen flocks of honking Canadas were seen, and one flock of small Hutchins', as well as a flock of Geese intermediate in size, the White-fronted Geese, passed.

Many flights of Ducks were seen, but from the usual distance not all could be recognized. However, Mallards, Pintail, Teal and Scaups were made out. Late in the afternoon I went to a near-by lake with my binoculars, and identified there the following species: Hooded Merganser, Mallard, Gadwall, Baldpate, Green-winged Teal, Shoveler, Pintail, Redhead, Canvasback, Lesser Scaup Duck, Ring-

necked Duck, Golden-eye, and Buffle-head.

Among the land-birds enjoyed on that spring day may be mentioned: Chestnut-collared Longspurs, migrated throughout the day, singing as they went; a pair of American Pipits; Swainson's Western Red-tail, and Marsh Hawks and Prairie Falcons and Redwings galore. Western Meadowlarks were singing on every side. Early in the morning the drumming of the Prairie Chicken resounded from afar.

I hope that the thousands of bird-lovers who would appreciate it may sometime have the pleasure of spending such a day as I have tried to describe, in Dakota.—STEPHEN SARGENT VISHER, *Vermilion, S. D.*

Leucostictes Making Cliff Swallows' Nests Their Night Abode

Late one cold January evening, while passing below a high, rocky cliff, I noticed a flock of small birds flying about near some Cliff Swallows' nests. They were greatly disturbed by a Golden Eagle which was soaring near the cliff, and would dart out after him every time he passed.

The following morning I climbed up the steep talus under some of the lower nests, but no birds were to be seen. But that evening, when I again climbed up to the nests, the birds were there, as on the previous evening. They all flew out of the nests as I approached, and, to my great surprise, I found them to be the Gray-crowned Leucosticte (*Leucosticte tephrocotis*), a ground bird, making the home of a cliff-dweller its night abode. It did not seem possible, but it was true; for, while I stood beneath the towering rock, these little birds hovered overhead, scolding me, and at times some would come quite near. But they quieted down, upon finding I was not going to harm them, and soon they were entering the nests again, scolding and quarreling over the ownership of the various nests. They had not the certainty of entering the nests that the Swallows have, but hovered for some time at the door, then made a dive at it;

sometimes to miss their hold on its bottle-neck, or to find the nest already occupied by a quarrelsome neighbor.

Before long the birds had all gone indoors again; but there was an eye at every window, watching me as I prowled around below.

From the litter on the rocks and ground these nests must have been occupied ever since these birds came down from their northern summer home, which is about the middle of November.

During the day, the Leucosticte spends its time in the hills among the sage brush, in search of seeds. But, when the evening sun throws long, slender shadows across the valleys, they return to the cliff for the night.—SANDFORD MILLS, *Hailey, Wyo*

Wilson's Snipe and Its Nest

It was in a willow swamp on the east side of the Bridger Mountains, Mont., that I first made an intimate acquaintance with the Wilson's Snipe. The swamp was the home of many kinds of birds. A colony of Brewer's Blackbirds built their nests in the willows, and with them were one or two nests of the Thick-billed Redwing. In an open, grassy spot, Western Savannah Sparrows and Bobolinks were common; and, each time I ventured in a certain direction, a pair of Wilson's Phalaropes circled about my head, uttering soft, plaintive notes. Near a small pool of water, several Killdeer and a pair of Carolina Rails were usually feeding. In a corner where the willows grew tall and thick, I found the bulky arched-over, mud-and-stick nest of a pair of Magpies. In addition to these birds, the early morning chorus proclaimed that Goldfinches, White-crowned and Song Sparrows, Yellow Warblers, Yellow-throats, Catbirds, Chickadees and Robins inhabited the willow thicket.

During May and early June, the most noticeable bird of all was the Wilson's Snipe; though, as far as I knew, but a single pair inhabited the swamp. From early in the evening, throughout the night, and often until nine or ten o'clock in the

morning, the male Snipe was almost constantly circling over the swamp, high in the air, and, at intervals of perhaps five or ten seconds, making a series of loud, whirring wing-notes. Heard in a dark night, the weird sound seems to be only a few feet over one's head; but, in reality, the bird is high up, often so high that it is difficult to find him, even in daylight. The bird begins his flight by a long, noiseless slant, at an angle of perhaps fifteen degrees to the horizontal. He soon reaches a culminating point, turns and shoots downward at about the same angle, producing the curious sounds, which grow louder and higher in pitch as the bird descends. This ascending and descending flight is continued around and around in a wide circle two hundred yards or more in diameter.

Once, when watching this performance, I noticed that the bird began this downward flight when directly opposite the peak of a distant mountain. I counted the number of upward and downward flights as it went around the circle, and at the end of five complete flights found it again opposite the mountain peak. I watched it several times as it circled round, and found just five flights in each circle. From where I stood, the circle divided into ten equal parts by the high and low points of flight, and each of these points was always opposite a certain point in the horizon.

Several times I searched about the swamp, in an attempt to find the Snipe's nest, but was unsuccessful. Occasionally I flushed a Snipe, and often heard its long, Rail-like call. On June 7, however, when returning to the vicinity after an absence of several days, a friend who lived in a cabin near the edge of the swamp told me that he had found the nest. In a small grassy opening among the willows, he pointed out the mother Snipe seated on it. I approached within a few inches of her back before she finally left the nest. She dropped into the grass a few feet away, and, for a time feigned lameness, in an attempt to lead us away. The nest was merely a hollow lined with a few

coarse grasses. The four dark brown, heavily spotted eggs were placed with the points together and the large ends up and out.

On June 12 I found that the young were just coming out. One young bird, still wet, lay beside its broken shell. A second egg was cracked clear across, and a third egg pipped. Soon the second egg had fallen apart, and the young bird, with one foot in the air, was struggling to free its head from the shell. During all this time, the mother Snipe remained a few feet away in the grass, watching us and occasionally calling excitedly. The male was circling through the sky, as usual, and appeared to take no interest whatever in the nest or the young.

The next morning I was out early to see what had occurred during the night. The sky was clouded and a light rain was falling. I flushed the female near the nest, but found only broken shells and the fourth egg, which had not hatched, in the nest itself. After a long search through the grass surrounding the nest, I found a young bird only a few inches from its edge. It appeared nearly twice as large, and fully three times as interesting, as the little wet chicks of the night before. In spite of a rainy night, it was fluffed out into a little round ball of brown, cream-spotted down. After a little more search, I discovered the other two young hiding in the grass close to the nest.—ARETAS A. SAUNDERS, *Anaconda, Mont.*

Notes From Prospect Park Brooklyn, N. Y.

On May 14, 1912, we observed Brewster's Warbler and the Mourning Warbler in Prospect Park.—K. P. and E. W. VIETOR, *Brooklyn, N. Y.*

Unusual Abundance of Goldfinches

BIRD-LORE will be glad to receive any notes on the exceptional abundance of Goldfinches during the past spring. At Englewood, N. J., they have been observed, since April 15, in flocks containing several hundred individuals.—FRANK M. CHAPMAN, *Englewood, N. J.*

Book News and Reviews

HANDBOOK OF BIRDS OF EASTERN NORTH AMERICA. With Introductory Chapters on the Study of Birds in Nature. By FRANK M. CHAPMAN. With full-page plates in colors and black and white by Louis Agassiz Fuertes, and text-cuts by Tappan Adney and Ernest Thompson Seton. Revised Edition. New York and London: D. Appleton & Co., 1912; xxx + 530 pp.; 12mo, 24 plates, 1 map, 1 color chart, 136 text-cuts.

Nearly a score of years ago, the needs of the amateur bird student were recognized and met by the publication of the first edition of the 'Handbook.' It set a standard that is not only maintained in the new edition before us, but one that is now raised to an even higher plane, the best of the old features being retained and many new ones added, without materially increasing the size of so handy a volume. It is thoroughly up to date, being virtually rewritten and improved with new subject matter and new plates, and is, in fact, a veritable granary of ornithological information, concisely arranged by an author who, from personal experience, is thoroughly familiar with his subject, and possessed of remarkable skill in separating the superfluous dross from the fine gold. The beginner is pleasantly led from subject to subject, the advanced student will find much to occupy his close attention, and even the haughty expert, on turning the pages, may learn a great deal that he did not know before.

Viewed at close range, the 'Handbook' is made up of two component parts: (1) an 'Introduction' which of itself would constitute a book of essays, and (2) 'The Birds of North America east of the Nineteenth Meridian,' a part of which contains concise descriptions of plumages, nests and eggs, measurements and ranges, migration and nesting dates, and brief bits of life histories.

The brevity of Part II is made possible by the comprehensiveness of Part I, which presents "at least a suggestive biography

of the bird," or rather, so deals with topics germane to every bird that, so far as the individual species are concerned, much may be taken for granted.

Comparing the new edition with the old, we like the old style of type better than the new, but, aside from this minor consideration, the new surpasses the old in every way. There is an increase of pages from 421 to 530, of plates from 20 to 24, of illustrations from 115 to 136, and a large expansion of the introductory matter. Among the well-chosen plates are some of Mr. L. A. Fuertes's best and, as a splendid study of owls in black and white, Plate XVIII is certainly unsurpassed. The Biological Survey's colored zone map of North America is a most useful addition, and even the rule marked with both inches and millimeters is an improvement on the first edition. Many bibliographic references to species have been grouped at the ends of the chapters of the introductory part, or under the species or group to which they refer, and the volume concludes with a convenient bibliography in which the titles of Standard 'local lists' are arranged under states.

The 'Introduction,' prefaced by a 'Historical Review' and 'Plan of the Work' deserves the thoughtful consideration of every reader. It is divided into the following chapters and sections:

Chapter I.—Why we should study birds.

Chapter II.—A word to the beginner.
Finding and naming birds.

The equipment of the field-student.
Collecting birds, their nests and eggs.
American ornithological societies.

Current ornithological magazines.

Chapter III.—The study of birds in nature.

The distribution of birds.

The migration of birds.

The voice of birds.

The nesting season.

The plumage of birds.

The food of birds.

General activities of the adult bird.

The above sections are again subdivided and have convenient subtitles to catch the eye, while a feature new in this edition is the closing of each new section with a bibliography of the more important articles bearing upon that particular subject of which it treats, and with a sort of an examination paper for the benefit of the student. The bibliographies, or 'References,' will prove a boon to those who wish to dip deeper into any of the subjects, and are the cream of the literature. We may not dwell deeply upon the merits of each of the chapters, but we are under the impression that the section on 'The Migration of Birds' is perhaps the best essay that has yet been written on this fascinating subject of mystery and contention. The author's wide field experiences enable him to cull the conflicting facts and figures of others, and weave them into harmony with his own ideas, which incline toward setting "instinctive functional activity" as the mainspring of migration. Nor is his statement that "existing phenomena are not therefore to be explained solely by observable causes," for the reason that "birds have been migratory for an incalculable period," likely to be challenged. This essay, illustrated by several instructive maps, is only one of the many gems hidden among the pages of the 'Hand-book,' which is not only a monument to the knowledge and ability of its author, but a boon to every bird student.—J. D., JR

A HISTORY OF THE BIRDS OF COLORADO.
By WILLIAM LUTLEY SCLATER. With-
erby & Co., 326 High Holborn, London,
1912. 8 vo, xxiv, + 576 pp., 17 plates,
1 map. Price, \$5.

This excellent work is published as a memorial to the late General William J. Palmer, so well known as a public-spirited citizen of Colorado, but it is also a memorial to the all-too-brief stay of its author in this country as director of the Colorado College Museum. It is, in fact, a manual of Colorado birds, with keys to orders, families, genera and species, descriptions of plumages, notes on general and local distribution, with a concord-

ance of previous records of occurrence, and a short account of general and nesting habits.

The illustrations are from photographs, there is a contour map of Colorado, a bibliography and a gazetteer of localities mentioned; in short, the work is well planned and well executed, and we can only regret that it could not have been issued in a large enough edition and at a low enough price to be accessible to all students of Colorado bird-life for many years to come.—F. M. C.

WOODLAND IDYLS. By W. S. BLATCHLEY.
Indianapolis. Nature Publishing Co.,
1912. 16mo, 242 pp., 3 half-tone plates.

Here is the record of close, intimate communings with Nature, as she revealed herself to the author during various camping trips in western Indiana. Mr. Blatchley's text is "Be ye satisfied with little things," and the pleasure and profit he derives from a study or contemplation of everyday nature round about us is a sermon of reproach to him who thinks more wonderful worlds exist than those we find at our threshold.

It is not so much what we see, but how we see it, is the lesson this little volume teaches, and we commend it particularly to those whose field of outdoor opportunities is geographically limited, but, as this book will show, potentially without bounds.—F. M. C.

The Ornithological Magazines

THE AUK.—The April number of 'The Auk' under the guiding hand of the new editor, Mr. Witmer Stone, is quite up to the standard so long maintained by Dr. J. A. Allen, and contains a large number of interesting articles. A particularly pleasing study of the home life of a bird is Mr. R. T. Moore's 'The Least Sandpiper During the Nesting Season in the Magdalen Islands,' illustrated with several half-tones; and another bit of careful bird study by the late Mr. Frank Bolles, entitled 'Notes on Whip-poorwills and Owls,' has been gleaned

from his notes by Mr. Brewster. Such accurate and precise observations are to be commended as models for the younger generation of bird lovers to follow.

We are taken afield in South America by Mr. S. N. Rhoads, in his 'Birds of the Paramo of Central Ecuador,' and we read, too, 'A last Word on the Passenger Pigeon,' by Prof. C. F. Hodge. A somewhat speculative paper by Dr. S. F. Trotter on 'The Relation of Genera to Faunal Areas' claims attention. One by Dr. C. W. Townsend on 'The Validity of the Red-legged Subspecies of Black Duck' tells of some Ducks in captivity. The distressing conditions that prevail in foreign countries, where all sorts of small birds are sold for food in the markets, are set forth by Dr. L. B. Bishop, under title of 'Birds in Markets of Southern Europe.' Song birds are sold like vegetables, strung together in bunches.

A fine illustration of what a bog priority is for the professional ornithologist is afforded in Mr. S. N. Rhoads' 'Additions to the Known Ornithological Publications of C. S. Rafinesque.' A couple of numbers of an old magazine, 'The Cosmonist,' have been unearthed, one containing an earlier name for the Cliff Swallow, and the other an earlier name for the genus *Hydrochelidon*, and misspelled at that! There are said to be eighteen other missing numbers suspended like the sword of Damocles above the heads of the nomenclaturists. There is also professional food for reflection in Mr. Witmer Stone's comments on 'Vroeg's Catalogue.'

Prof. H. L. Clark's 'Notes on the Laysan Finch' are chiefly pterylogical and anatomical. Mr. W. L. McAtee discusses 'Certain Phases of the Theory of Recognition Marks,' pointing out how easily birds of supposedly keen eyesight are decoyed by the crudest devices. Dr. D. E. Wheeler offers 'Notes on the Spring Migration at Timber Line, north of Great Slave Lake,' a region little known save to trappers and Indians; hence the sketch map accompanying the paper is of value. Mr. C. H. Kennedy has 'Further Notes on the Fruit-eating Habits of the Sage

Thrasher in the Yakima Valley, Washington,' and Mr. John E. Thayer gives the history of some of the 'Great Auk Eggs in the Thayer Museum,' together with a half-tone of one of them.

'An Apparently Unrecognized Race of the Red-shouldered Hawk' is described by Dr. L. B. Bishop, and named *Buteo lineatus texanus*.

The Notes and Reviews are particularly full, and we are glad to see an effort made to index the contents of the ornithological journals of all countries. Those who bind their Auks should take notice that the annual list of officers and members appears in this number.—J. D., JR.

THE CONDOR.—The March number of 'The Condor' contains only three general articles. The first and most extended is entitled 'A Week Afield in Southern Arizona,' by F. C. Willard. This paper, which is illustrated with seven text figures of nests and nesting-sites, gives the experiences of an egg-collecting trip in the region between Tombstone and Tucson during the latter part of May, 1911.

Mailliard's article on '*Passerella stephensi* in Marin County,' which contains the results of a critical examination of a series of specimens, shows that Stephens' Fox Sparrow, instead of being confined to Southern California, breeds in the Sierras as far north as Tulare County, and occasionally wanders north in winter to Marin County, opposite the upper end of San Francisco Bay. Ray's account of the 'Nesting of the Canada Goose, at Lake Tahoe,' is a welcome contribution to knowledge.

At the meeting of the Northern Division of the Cooper Club, held in January, a 'Committee on the Conservation of Wild Life' was appointed as one of the permanent committees of the club, and a statement outlining its work has been prepared by its chairman, W. P. Taylor. Created for the purpose of coöperating with other organizations and stimulating public interest in the protection of wild life, this committee has a wide and important field before it, and is in a position to take up some of the broader problems of game conservation on the Pacific coast.—T. S. P

Bird-Lore

A Bi-monthly Magazine
Devoted to the Study and Protection of Birds
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN
Contributing Editor, MABEL OSGOOD WRIGHT
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Bird-Lore's Motto:

A Bird in the Bush Is Worth Two in the Hand

THE bill to protect migratory game and insectivorous birds (No. 6497), which was introduced into the United States Senate by Senator McLean, on April 24, was reported on favorably by the Committee on Forest Reservations and Protection of Game, two days later. Game commissioners and other officials representing forty-three states appeared before the Committee, and its report states that "their testimony based upon years of experience and practical observation, was conclusive to the fact that state control of migratory birds, must, from the very nature of the surrounding temptations and conditions, end in failure."

Under the provisions of the bill in question, the United States Department of Agriculture would decide at what season migratory game birds could be properly hunted. That is, the often widely varying laws now existing would give way to one law based, not on selfish or local considerations, but with a full understanding of all the facts involved, and with an eye to the rights of the public at large rather than to the short-sighted interests of the few. Everyone desirous of due protection for our migratory birds will realize how incalculably the cause of bird conservation would be advanced by the passage of this measure, and it is hoped that it will become a law.

This measure, we should add, embodies, in effect, the provisions of the original Shiras bill.

IN addition to the usual articles accompanying the colored plates appearing in this issue of BIRD-LORE, we print also studies of the Rose-breasted Grosbeak and Ruby-throated Hummingbird, which could have been made only through that close, intimate, personal association which we establish with any creature which depends upon us for its existence.

Whether the lives of the 'Little Hummer' and 'Ezekiel' were prolonged or shortened by human care, or whether even in sympathetic captivity, they missed that freedom which was their rightful heritage, we may not know; but it is significant that each recorder of the history of these short lives expresses, independently, her belief that they were not lived in vain.

AMONG current items of popular newspaper natural history designed to rejoice the discriminating, is a somewhat pretentious article in a New York evening paper, which prides itself on accuracy of statement, in which a fluent if not wise reporter writing on John Burroughs' seventy-fifth birthday, tells us how greatly Mr. Burroughs' has missed hearing the song of the wake-robin this spring! No one, we may add, to whom we have related this delightful observation, has enjoyed it more than Mr. Burroughs.

We should also share with BIRD-LORE's readers our pleasure in an advertisement which appears in a late issue of a millinery trade journal, offering for sale, in addition to "gorgeous and dazzling Paradise, Goura, Pigeon and Numidie," the "exceedingly rare and rakish quills of the Great Auk." If this be a joke, it appears to be on the advertiser, since the Great Auk, as a member of the family Alcidae, is protected by the laws of the state in which its "quills" are offered for sale.

THE next issue of BIRD-LORE will contain an important and valuable article by Mr. Frederic H. Kennard on planting for birds, with a practically complete list of the shrubs and trees of temperate eastern North America, which bear fruit on which birds may feed.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, at 53 Arlington Avenue, Providence, R. I.

A TIMELY SUGGESTION

In the Summer School of Science that is held during July, at Yarmouth, Nova Scotia, there are fifty-eight scholarships offered for competition, which shows, to quote 'The Educational Review,' that "a practical and very wholesome interest is being taken in the school by its friends."

It is quite common, nowadays, for the lay public to interest itself in educational matters, either individually or through clubs and other organizations. There is no end to the scholarships that have been established in colleges and universities, but very few have, as yet, been placed in summer schools.

Now that our common schools stand in so great need of practically trained teachers of nature-study, what better way could there be to meet this need, and what more desirable task could Audubon Societies undertake than to found some scholarships in summer schools, where nature is studied in the open, for teachers who would like the opportunity for study in such schools, but who cannot meet the entire expense of tuition, board and carfare?

In answer to inquiries regarding summer schools, the following list is given, with addresses, in most cases, to which may be sent applications for circulars:

Cornell Summer School. Cornell University, Ithaca, N. Y.

Woods Hole Biological Station. Prof. F. R. Lillie, University of Chicago, Chicago, Ill.

Storrs Summer School. Pres. C. L. Beach, The Connecticut Agricultural College, Storrs, Conn.

The Biological Laboratory of The Brooklyn Institute of Arts and Sciences. Dr. C. B. Davenport, Cold Spring Harbor, Long Island, N. Y.

Summer School of Science, Yarmouth, N. S. J. D. Seaman, Sec., 63 Bayfield St., Charlottetown, P. E. I.

The Summer Station of The Leland Stanford Jr. University. Pacific Grove, Cal.

La Jolla Summer Station. Prof. C. A. Kofoid, University of California, Berkeley, Cal.

The Mountain Laboratory. Dr. Francis Ramaley, University of Colorado, Boulder, Col.

Summer Station of the University of Michigan, in 1912, near Mackinac Island. Prof. D. E. Rankin, Ann Arbor, Mich.

The Ohio State Lake Laboratory. Prof. Herbert Osborn, Ohio State University, Columbus, Ohio.

The Puget Sound Station. Prof. Trevor Kincaid, University of Washington, Seattle, Wash.

Summer School of the South. Knoxville, Tenn.

South Carolina Summer School. Rock Hill, S. C.

Virginia State Summer School. Charlottesville, Va.

For other Summer Schools of the Middle West, inquire of the Editor of The Nature-Study Review, School of Education, University of Chicago, Chicago, Ill.—A. H. W.

FOR TEACHERS AND PUPILS

Exercise III. Summer Neighbors

Correlated Studies : Geography, Arithmetic and Drawing

In the preceding exercise, a brief description was given of the great number of spring travelers which may be regularly found at this season of the year, all about us. To describe, even very concisely, the destinations and summer activities of each of these travelers would fill many pages. Among birds alone, there are hundreds of migrating species. In order to gain any clear idea of their movements, it will be necessary to select only a few of the commonest, and follow them to their summer homes.

This may seem an easy thing to do, but it is really a difficult task to determine just which species are the commonest throughout the length and breadth of our great continent. The birds which are best known in the East may be rare, or entirely absent, in the West, while those which nest in the same regions of the North, may travel various routes thither from the South.

In the table, given below, thirty species have been selected, representing nearly all orders of North American birds, and the majority of families into which the largest order is subdivided. Some of these birds may be quite unfamiliar to many, but by learning a few facts about each, in a systematic way, it will soon become easy to remember a great deal about a large number of birds that are nearly related to each other, in the various orders and families noted.

The systematic study of any group of related objects, living or dead, is known as *classification*. Although it is sometimes considered hard and uninteresting, it is after all the only convenient and sure way to learn about the vast numbers of birds and other forms that make up nature. Let us think of classification as a large case, which shows, when the door is opened, a number of graduated pigeon-holes one within another, like an eastern juggler's set of boxes.

We may begin with the largest pigeon-hole, marked *class*, and put into it all the birds in the world, but upon comparing different birds, it will be found that some are more nearly alike than others. In North America, we can pick out seventeen such groups, which are called *orders*, when thus divided. The pigeon-hole marked *class*, therefore, must be large enough to contain not only seventeen smaller pigeon-holes, but also several others for orders of birds found elsewhere in the world. Sorting out our birds into their respective orders, we may next go through each order separately, and again find smaller groups, still more closely related, which are known as *families*. Re-sorting once more, we may go on, subdividing each family into *genera*, the singular of which is *genus*. Just as we might expect, the pigeon-holes for genera are smaller in size and frequently more numerous than those for families and orders.

But, after all this work, we shall keep finding birds mixed together that are quite unlike each other. By sorting over the different genera in each family, we shall at last get single kinds of birds, or *species*, as they are called. However, as we shall see later, even one kind of bird may vary much in different climates and localities,—so much, indeed, that it has been thought best to give still another name to each one of the varieties of a species. Accordingly, we find the smallest pigeon-hole of all marked *subspecies*.

Now to illustrate all this, take the common Song Sparrow, which is found quite generally throughout North America. It is a species which varies so greatly in different places and in different climates that at least twenty subspecies of it are known, each looking like a Song Sparrow, but no two of which are exactly alike.

Along with the Song Sparrow are two other species, Lincoln's and the Swamp Sparrows, quite similar in general appearance. For convenience, these three species are placed together in one genus. But there are hundreds of species of Sparrows, to say nothing of Finches, Grosbeaks, Crossbills, Longspurs, and other seed-eating birds, all so much alike in habit and structure that the various genera to which they belong seem to come naturally into a great family group. This family, like a large number of other families, is made up of birds which have feet enabling them to perch on a support. Taken all together, they are easily recognized as perching-birds, belonging to the same order.

Now when all the different orders of birds in the world are put together, we have just birds in a class by themselves, as distinguished from all other animals and plants which are each classified in a similar manner.

One cannot learn a table of classification in the same way as a table of weights or measures. It would be extremely handy if one could commit to memory such a table, say, as this:

- 20 Subspecies make a species.
- 10 Species make a genus.
- 5 Genera make a family.
- 3 Families make an order.
- 21 Orders make a class.

No, this will not do, for nearly every order has a different number of families, and nearly every family, a different number of genera, and so on through the entire list. These relationships can better be learned out-of-doors than by rule of book, provided the observations made are pigeon-holed in a practical way. By making a simple table of classification to "carry in the head," it becomes easy to recognize birds by their form, habits, food, flight, voice and general appearance, rather than by plumage alone. When the student learns to observe in this way, classification becomes an alphabet by means of which natural objects reveal their relations to each other.

Coming now to the table of thirty representative species, that we hope

will bring us into touch with all our feathered spring travelers and summer neighbors, we find that the list includes all kinds of birds, living on land or water, or in the air above us.

AN OUTLINE OF NORTH AMERICAN BIRDS

Name of Species	Order	No. of Families	No. of Genera	No. of Species	No. of Sub-species
Loon.....	I. Diving Birds.....	3	17	33	10
Herring Gull.....	II. Long-winged Swimmers.....	3	12	47	8
Wilson's Petrel.....	III. Tube-nosed Swimmers.....	2	17	40	2
White Pelican.....	IV. Totipalmate Swimmers.....	0	0	20	0
Canada Goose.....	V. Ducks, Geese and Swans.....	1	30	58	10
[Flamingo, tropical].....	VI. "Long-legged Ducks".....	1	1	1	
Great Blue Heron.....	VII. Wading Birds.....	4	10	21	12
Coot.....	VIII. Running Birds.....	3	10	21	0
Spotted Sandpiper.....	IX. Shore Birds.....	7	42	09	17
(Bob-White, etc., resid't).	X. Gallinaceous Birds.....	4	14	23	48
Mourning Dove.....	XI. Pigeons and Doves.....	1	10	14	10
Bald Eagle.....	XII. Birds of Prey.....	0	32	59	72
[Carolina Paroquet].....	XIII. Parrots, Macaws, etc.....	1	2	2	
Belted Kingfisher.....	XIV. Cuckoos, Trogons, etc.....	3	6	11	8
Downy Woodpecker.....	XV. Woodpeckers.....	1	10	24	34
Chimney Swift.....	XVI. Goatsuckers, Swifts, etc.....	3	19	28	4
.....	XVII. Perching Birds.....	24	138	352	437

NOTE:—Fifty species and seventy-two subspecies are *extralimital*. A. O. U. Check-List, 1910.

ORDER XVII—PERCHING BIRDS

Name of Species	Suborder	Family
Tropical		
[Cotinga].....	Clamatores, or Songless Birds	1. Cotingas.
Kingbird.....		2. Flycatchers.
Horned Lark.....		3. Larks.
Crow.....		4. Crows, Jays, Ravens, etc.
Starling.....		5. Starlings.
Cowbird.....	Oscines or True Singing Birds	6. Blackbirds, Orioles, Grackles, etc.
Song Sparrow.....		7. Grosbeaks, Finches, Spar- rows, etc.
Scarlet Tanager.....		8. Tanagers.
Barn Swallow.....		9. Swallows.
Cedar Waxwing.....		10. Waxwings.
Northern Shrike.....		11. Shrikes.
Red-eyed Vireo.....		12. Vireos.
[Bahama Honey Creeper, sub- tropical].....		13. Honey Creepers.
Redstart.....		14. Wood Warblers.
(Pipit).....		15. Wagtails.
(Dipper).....		16. Dippers.
Brown Thrasher.....		17. Thrashers, Mockingbirds, etc.
House Wren.....		18. Wrens.
Brown Creeper.....		19. Creepers.
(White-breasted Nuthatch, resi- dent).....		20. Nuthatches.
(Chickadee, resident).....		21. Chickadees.
(Wren-Tit).....		22. Wren-Tits.
Ruby-crowned Kinglet.....		23. Kinglets, Gnatcatchers, etc.
Robin.....		24. Thrushes, Robins, Bluebirds, etc.

NOTE:—Brackets signify southern species sparingly represented in North America; parentheses, resident species or those not commonly known.

Studying the birds in this table carefully and in the order given, let us see how many we have ever heard of before. Probably the Perching Birds are most familiar, and who can guess for what reason? Arithmetic may help us to answer this question. Suppose we look up the different families and species under each order and discover which order contains the most families and which the most species? Also, which contains the fewest? We might figure out, too, how many species there are in all the orders taken together.

It is estimated that there are over 12,000 species of birds in the world, possibly as many as 14,000. Do you think North America has its share of birds? Sometime we may learn how all these different kinds of birds are distributed throughout the world, but now we must turn to the thirty species we have selected and find out something of their summer homes, and how they may happen to be our neighbors for a few months of each year.

The Loon belongs to an order of birds that is made up of three quite distinct families: the Grebes, which look like small, tailless ducks; the big Loons; and a large group of strange, northern birds, Auks, Puffins, Guillemots, Murres, and the little Dovekie, few of which come down to temperate North America. The Loon is as remarkable a diver as any of these water-birds, and is known quite generally throughout the length and breadth of our continent. In winter, you may find it from the region of the Great Lakes, southern British Columbia and southern New England down to Florida, the Gulf Coast and Lower California. With the coming of spring it starts north and for those who know its conspicuously marked black-and-white plumage it is a migrant eagerly awaited. Draw a line on your map from northern California eastward to the northern part of Iowa, Illinois, Indiana, Ohio, New York, New Hampshire, and so on, to Nova Scotia. South of this line the Loon rarely, if ever, breeds, but north of it you may follow the nesting of this spring traveler up to Kotzebue Sound, Banks Land, Barrow Strait and northern Greenland.

Quite different from the Diving Birds are the Long-winged Swimmers of Order II. Skuas, Jaegers, Gulls, Terns, the Noddy and the Black Skimmer are found here, all of them birds of much grace on the wing, especially the beautiful Gulls and Terns, or "Sea-swallows," as the latter are commonly called. Probably no species in this order is better known than the large Herring Gull. Its winter home extends from the northern edge of the United States to Lower California, western Mexico, the Bahamas, Cuba, Yucatan, and the coast of Texas; while, in Europe, it is found as far south as the Caspian and Mediterranean Seas. Springtime finds this gull moving northward to nest. How far north it goes you may see on the map, by looking up central Alaska, Melville Island, southern Ellesmere Land and Cumberland Sound. In this order of birds, as in the first order, we find stories of great destruction. Take time to read about the former breeding-resorts of the Gulls and Terns and compare them with those now in use. You will learn many surprising facts.

It is quite true that we cannot afford to lose these feathered scavengers about our harbors, coasts, and larger inland waters.

It is more than likely that many of you have never seen or heard of the Tube-nosed Swimmers, unless, possibly, you have read of the Albatross, or the Petrels which go by the name of "Mother Carey's Chickens." The birds of this order wander far out to sea, being seen only occasionally off land.

Fulmars, Shearwaters, Petrels and the powerful Albatrosses, famed in song, that find their way over the southern Pacific even to the coast of China and Japan, are all birds of the ocean, wanderers of the high seas from the largest to the smallest. Transatlantic voyagers often see the little Wilson's Petrel, beating back and forth by the ship, at home anywhere on the vast expanse of water. From May to September, it roams the Atlantic as far north as the British Isles and Labrador, very rarely straying to inland waters. February finds this hardy visitor breeding in rocky crevices along the little-known islands of the Antarctic Ocean. Can you reckon the distance from Labrador to Kerguelen Island, and find out how long a journey this tiny Petrel, which is scarcely larger than a Sparrow, makes?

In order IV we find birds which have all four toes webbed. Their young are born naked, instead of feathered like those of other water-birds, and therefore their nests are fashioned with more care. A strange group of birds is this, from the long-tailed Tropic-Birds, the curious Anhinga, or Water-Turkey, sometimes also called "Snake-bird," and the Man-o'-war-bird or "Frigate-bird" which is noted for its wonderful power of flight, to the Booby and Gannet, the odd-looking Cormorants, and still odder Pelicans. The great White Pelican, which is fast becoming rare, as its breeding-haunts are claimed by man, is one of the notable travelers of the interior, while the Gannet and Cormorants are better known along our coasts. The White Pelican goes as far north as latitude 61.^o In the winter it leaves the United States, except along the borders of the Gulf of Mexico and Southern California, keeping on to Central America.

Order V brings us to birds which we know and see rather commonly. Of all spring travelers, the Canada or "Wild" Goose is perhaps the most welcome, for, when the "honking" of Wild Geese is heard, we feel sure that snow and ice will melt soon. From Texas, Florida, southern California, and now and then from Jamaica and the Bermudas, this large Goose comes on powerful wings, to nest in bleak Labrador to the East, and from the north of those states fed by the upper Mississippi, west to Oregon, and so far on, up to the tree-limit in the lower Yukon valley, northwestern Mackenzie and central Keewatin. One must have sharp eyes to spy out the swiftly flying birds of this order, whose whistling wings cut the air with the speed of an express train, as they fly by in orderly companies.

Quite as striking a bird, either on the wing or on foot, as the Canada Goose, is the Great Blue Heron, the largest of the wading-birds which commonly

visit us. Indeed, no order contains a more interesting or remarkable group of birds than Order VII, for here belong the Roseate Spoonbill, the Ibises with long, curved bills, the Storks, the exquisite Egrets, the Herons of darker plumage, and the stealthy Bitterns. Largely gregarious by habit, it has been easy for man to nearly exterminate several of these species. It is, perhaps, well that so few of them come north to spend the summer with us. The Great Blue Heron is a traveler of no mean extent, since it comes from the West Indies, Panama and Venezuela to Prince Edward Island, northern Ontario, central Alberta, Manitoba, and southeastern British Columbia.

Order VIII is a little-known group, so far as the ordinary bird-student is concerned, and small wonder, when we think of the secretive, swift-footed birds which belong to it. Who has tried to watch a Rail or a Gallinule or the southern Limpkin, or who has had an opportunity to see the great Cranes which have become so rare in our day? The Coot, of all these short-tailed runners, takes to the water with the ease of a Duck. During migration, its white bill, ringed about with brownish spots, makes it a conspicuous object, in spite of its dull slate-colored plumage. Some Coots remain in southern Mexico, Guatemala and the West Indies, to breed; while others, coming up from Colombia and Central America, spread out widely over the northern half of the United States and southern British America.

And now we come to birds of somewhat smaller build, and of even greater variety, the Shore Birds, among whom is our most famous long-distance traveler, the Golden Plover. No mean tourist is the Spotted Sandpiper, so common along inland waters, as well as on the coast. Take the map and find southern Brazil and central Peru; then go north to the tree-limit in Alaska and on to Mackenzie, Keewatin, Ungava and Newfoundland, taking a jump across the ocean to Great Britain and Helgoland, for even to these distant parts has this Sandpiper been known to stray.

The Shore Birds are hard to recognize until one becomes used to their motions, flight and call-notes, but, once learned, they are seldom forgotten. The names of the different birds in this order suggest the wonderful variety of feathered travelers along our shores and waterways. Phalarope, Avocet, Stilt, Woodcock, Snipe, Dowitcher, Sandpiper, Knot, Stint, Dunlin, Sanderling, Godwit, Green-shank, Yellow-legs, Willet, Tatler, Ruff, Curlew, Lapwing, Dotterel, Plover, Surf Bird, Turnstone, Oyster-catcher and Jacana are words to whet the imagination and arouse the curiosity.

Order X we must skip here, since it contains only resident birds, the Grouse, Bob-white, Ptarmigans, Partridges, Prairie Hens, Wild Turkeys, Curassows and Guans. Like Orders VI and XIII, it is interesting to study.

Order XI is not as large as some of the other groups, but it will always be famous on account of the Passenger Pigeon, "most beautiful of its kind," which it is feared, is now completely exterminated. The Mourning, or Carolina, Dove, which is far more common west of the Alleghanies than in the Atlantic

States, is smaller and less richly tinted than the Passenger Pigeon. From Panama to the great Saskatchewan plains, British Columbia, Manitoba, Ontario and southern Nova Scotia, this well-known Dove is found. Harmless and gentle, it is a species to protect. The destruction of the Passenger Pigeon within the memory of people now living is a warning which should put everyone on guard to save the Mourning Dove from a similar fate.

The Birds of Prey, sometimes spoken of as *raptorial* birds, are many in number, far-ranging in space, and of great economic value to man. We are used to Hawks, Owls and Eagles, but less familiar, perhaps, with Vultures, Kites, Gyrfalcons, the Osprey, and the curious tropical Caracara. The Bald Eagle, unlike some other members of this order that migrate regularly, is resident with us. From northern Mexico throughout the United States, this noble bird is sparingly found, while a subspecies, the Northern Bald Eagle, extends this range to the tree-limit in the Arctic regions. Like the Duck Hawk and Fish Osprey, the Bald Eagle has a fondness for water. It is always conspicuous on account of its white head, neck and tail.

Along our water-courses, the common Kingfisher seems a part of the scenery throughout its extensive breeding range. In summer, we may find it anywhere between the southern coast states and the Arctic regions. It is associated in Order XIV with the Trogons of the tropics and the Cuckoos, which migrate to the north temperate zone.

Of all the Woodpecker tribe, none is so familiar as the Downy. Known by different subspecies in different parts of the country, this species ranges quite generally through temperate North America. The Woodpeckers are less migratory by habit than many of the orders we have been studying and the Downy Woodpecker is called a permanent resident. Highly useful, like the majority of the Birds of Prey, our Woodpeckers should be well protected.

Order XVI brings us to a strange assortment of birds, the Night Hawks, Whippoorwills, Swifts and Hummingbirds, each of which has an entertaining history. Many years ago, it was thought that the Chimney Swift simply dropped into the mud to spend the winter, and, even now its exact route of migration is not known completely. It is an eastern species, breeding just north of the United States down to the Gulf Coast. It is known to visit Vera Cruz and Cozumel Island in winter, and will probably also be found in Central America. Before man put up chimneys, the Swift used hollow trees as a site for its colony of curious nests. Can you find out how it has been able to construct its nest against the sheer side of brick chimneys?

Brief as is this hasty survey of the sixteen orders outside of the Perching Birds, it is far too long to warrant us in taking up Order XVII now. We may, however, make as many observations as possible during May and June, on the great host of migrants belonging to this order. This will add much to the interest of a systematic study of them later.

SUGGESTIONS

Visit a museum, if possible, and look up the birds of the different orders, noting size, shape of bills, wings and feet, and general coloration of plumage. Look also for the nest and eggs, observing size, shape, color and number of latter.

Mount and hang up in the schoolroom colored pictures of the birds mentioned in the table, and as many more as may be practicable.

Draw the bills and feet of the different types represented in the orders given, using Chapman and Reed's "Color Key to North American Birds" as a guide.

For the story of the Great Auk, see "Lost and Vanishing Birds," by Charles Dixon; the Flamingo, Pelicans, etc., "Camps and Cruises of an Ornithologist," F. M. Chapman; the Passenger Pigeon, Downy Woodpecker, etc., "American Ornithology," Wilson and Bonaparte; Gulls and Terns, Reports of the Committee on the Protection of North American Birds, also those of The National Association of Audubon Societies, in 'The Auk' and BIRD-LORE.—A. H. W.

FROM YOUNG OBSERVERS

An Albinic Burrowing Owl

On November 28, while I was walking alone about three miles from home, near a series of rock ledges, I heard a very unfamiliar song, which seemed to come out of the rock. Walking up cautiously, I tapped the rock lightly. There silently flew from under it an Owl, which lit fearlessly on the ground, comparatively near. Being afraid of frightening the bird by nearer approach, I drew the accompanying picture from my situation. The note was about the same as that of other Burrowing Owls, although the body was more violently moved, as the *Ki-ca-rak* was uttered. Some boys, afterward going by, also frightened the bird out, shot it and gave it to me. It was nearly white (very light cream), with only five noticeable brown spots. No other difference in its plumage was perceptible. Several balls were found near its abode, which consisted entirely of hard portions of large beetles.—GEORGE SUTTON (age 13), *Fort Worth, Texas*.

[The pencil-sketch made by the observer, represents the Owl standing upright by a rock, full face to the front. It is seldom that any bird remains quiet long enough to have its picture drawn, even hastily, but it is worth while to try sketching living birds, in order to remember their characteristic attitudes more clearly. The Owl above described is a subspecies of a type species which is confined to South America. Highly beneficial in its food-habits, this interesting creature selects the disused burrow of some small mammal, a ground squirrel, prairie dog, woodchuck, fox, wolf, or the like, or of a land tortoise or large lizard, as a retreat and nesting-abode. For this reason, strange stories have been told about the remarkable relationship that is said to exist between the Burrowing Owl, the prairie dog and the rattlesnake. The truth is, that the rattlesnake eats the eggs and young of the Owl, the Owl in return, may eat the young snakes, and fiercely attack adults of various large species besides devouring with relish the young of the prairie dog, while the latter may also destroy the eggs of the Owl. Thus this strangely assorted trio, enemies each to the other by nature, are drawn together only by their peculiar habits. For a detailed description of the Burrowing Owl, see "Hawks

and Owls of the United States," by Dr. A. K. Fisher, United States Department of Agriculture, Bulletin No. 3, Division of Ornithology and Mammalogy, 1893. —A. H. W.]

An Acknowledgment

[Early in the spring, it was my pleasant task to send one of the traveling bird-boxes of the Rhode Island Audubon Society to the Slater Avenue School in Providence. Soon after, a small and radiant messenger brought me a large envelope, containing personal letters from each pupil in grades 3 and 4 B. These letters were written, first to express thanks for the use of the box, and then to relate individual experiences in feeding and observing birds during the winter. It would be a pleasure to print the entire list, if space would permit. The following extracts will show the spirit in which bird-study is undertaken by these children, whose ages are between 8 and 10 years.—A. H. W.]

. . . Monday, I put crumbs out for the birds. A little Sparrow came and stood by it. He seemed a little frightened at first, but a little later came and took a crumb. I put out some more this morning, but the wind blew them away. I am going to put some out every day now. . . .—HARRIETTE SUMNER (aged 8).

. . . I am very much interested in birds. I love to feed the birds too. We have the bird-box on the shelf in front to the room, so we can see it whenever we come into the schoolroom. For Christmas I wanted a bird book, but I did not get it. Every Christmas we put out our Christmas tree. After it is put outdoors, I make the birds a Christmas too. I get crumbs and straw and things they like. . . .—MARGERY ARMINGTON (aged 9).

. . . Sometimes when I am playing in the woods, I see lots of birds. One morning, when I got out of bed, I went to the window and saw six Blue Jays in the cherry tree in the next yard. I threw some bread crumbs out before breakfast, and when I came out to go to school they were all gone. . . .—ALLEN WILLIAMS (aged 8).

. . . I have seen the Blue Jay, the Sparrows, the Brown [Black?] and White Creeper, Chickadee and Woodpecker. I have not seen the Nuthatch this winter, but I am looking for it. I like birds very much and have fed them. I gave them some bread crumbs and water. I feed the Sparrows because not any other kinds have come to me yet. . . .—MARJORIE BEDELL (aged 9).

. . . I have seen a lot of Sparrows on our barberry bushes. They like barberries to eat. Once a Sparrow started to build a nest over my window. . . .—WILLIAM B. JACOBS (aged 9).

. . . Every morning I put out crumbs for the birds. They come every morning to get the crumbs to eat. I have seen the Chickadee, Nuthatch, Woodpecker and the Blue Jay. I like birds very much. We have a little kitty, and every morning he goes to the window to get the Sparrows. . . .—SHIRLEY S. ELSBREE (aged 8).

THE RUBY-THROATED HUMMINGBIRD

By MABEL OSGOOD WRIGHT

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 56

When the cherry blossoms have fallen and the buds in the tumbled-down old apple orchard are showing pink tips, when the gold-and-black Baltimore Oriole is calling plaintively to his belated lady-love, and the rich song of the unseen Rose-breast falls from the tree-tops,—with a whirr and a flash, a jewel set in a bit of iridescent metal-work slants across the garden, and we say with bated breath, “The Hummingbird has come.”

In this case, *the* has a very definite meaning; for in the length and breadth of the country that lies between the Mississippi and the Atlantic, and from Florida to Labrador, there is but one species of Hummingbird, that of the Ruby-throat. (The twilight flying creature so often mistaken for a Hummingbird is, in truth, a hawk moth.) Though there may sometimes be several pairs in a comparatively small area, the Hummingbird, like the Eagle, prefers to live alone, and never at any time of the year follows the flocking habit of other birds.

When a pair of Hummers first make up their minds to share your garden, you will have many chances to watch them before nest-building makes them more elusive. The Hummingbird has the reputation of being constantly on the wing; but, in reality, it is only so while it is collecting food, either the honey from flowers or the small aphids with which it feeds its young, and it spends quite as much time in perching as any other bird. Dead twigs of hemlock or Norway spruce make favorite perches here in my garden, and it often seems as if the dainty little thing chose the twigs with conscious regard to the color-protection of his surroundings, when, lo! he is off again, and this time perches in the open on a taut wire, where the light plays on every ruby feather of his gorget, making him conspicuous out of all proportion to his size.

While he rests thus, preening first one wing and then the other, it is a fine chance to study the bird in detail—the upperparts feathered in glistening green, with metallic tints of purple and blue upon wings and tail, and the wonderful ruby throat, separated from the dull gray-green breast by a line of light. From the end of his needle-like bill to the tail-tip he measures a trifle under three and one-fourth inches, while the wings that make the resonant hum, suggesting the motive power of a machine rather than of a bird, measure only about one and a-half inches on either side of the body. Truly this is our “least” bird, the competitor for this honor being the pert little cinnamon brown Winter Wren, that measures a trifle over four inches, and the confiding Golden-crowned Kinglet of the yellow-bordered orange crown, olivaceous



RUBY-THROATED HUMMINGBIRD

Order—MACROCHIRIA
Genus—ARCHILOCHUS

Family—TROCHILIDAE
Species—COLUBRIS

National Association of Audubon Societies
Educational Leaflet No. 56

ous upper plumage, and dull white underparts, a bird that we see frequently in orchards during the migrations. Though this Kinglet is only about one point longer than the Wren, and about one-fourth of an inch longer than the Ruby-throat, it appears to be much larger on account of its fluffy breast feathers.

So slim and compact is the Hummingbird that, seen at the usual distance, its plumage has more the appearance of metal work than the shaft and down of feathers. Its voice also has the sharp squeak of metallic contact, and is utterly unlike the usual bird note. I have heard precisely the same tone from a mouse. But, at close range, all these qualities are transformed. This is a case when a bird in the hand gave me a different idea of that same bird in the bush, forevermore.

Let it be distinctly understood, however, that the coming within range of my touch was by way of succor, and not by way of capture. Many times as the same thing has happened, the first is the best remembered, like many other first times, from the combination of surprise and novelty.

It was at the beginning of rose time. The long-tubed honeysuckles on the back porch brought the Hummingbirds in close range with the dining-room window, and, apparently fearless, they came to and fro during all the daylight hours, sometimes conversing in amicable squeaks, and then again waging a warfare of evidently angry words and beak thrusts, even though the pair were mates, one with the ruby-throat and the female without, after the family custom.

The lower part of the large window was screened by wire netting, the upper sash, with its diamond panes backed by the partly darkened room, made a series of mirrors, in which the male bird presently spied his own reflection. Could a high-spirited cavalier allow a rival not only to be in the same garden but to be hovering above the very honeysuckle with Mrs. Ruby! Forward and back went Sir Ruby, fencing with the reflection first in one pane and then another, squeaking shrilly, and gradually coming so close that he struck the pane recklessly. Then came a slip and a desperate thrust, when flying too low, the bird was caught by the beak in the firm meshes of the wire screen, where, after a single effort, he hung quite stunned by the shock.

Going outside, after hesitating a moment,—so frail and intangible a thing it seemed to touch,—I gently released the bill and laid the little body, now inert, with limp neck, in my palm. The tiny claws were closed like clenched fists; had its neck been broken,—was it dead? No, for the eyes were open bright, though they did not see, and one of the things that I learned years ago from that unfailing observer, Dr. Elliott Coues, was that, contrary to other forms of animal life, the eyes of a bird always shut in death.

As I closed my hand a little, with the natural instinct to brood and comfort the one hurt, I suddenly felt the thump of that mite of a heart, and the head raised a bit and then fell back again, beak parted. Water and a grass blade to carry the water to the beak drop by drop was the next step. The bill

closed and the water was swallowed until five drops were consumed,—quite a draught, all things considered. Another minute and the head was raised. I tried to make a perch of my finger, but it was too large by far. Securing a dry twig from the honeysuckle, I wedged it as well as I could with one hand across a berry basket that was on the porch table, and placed Sir Ruby upon it, setting the basket well into the shade of the vine.

The claws held firmly to the twig, and the bird settled down sleepily, his only motion being to rub his head (eyes now closed) under one half-raised wing. Then I moved back a few feet and waited. Perhaps two minutes passed when, without warning, Sir Ruby, with a single motion, darted from the vine without even touching the basket's edge, and angled across the garden, as good as new. What he thought I cannot know, but I shall never forget the wonderful revelation of the bird world, and reverence for the creative plan complete in so small a frame, that thrilled through me at the beating of that little heart against my palm.

As housebuilders, these Hummingbirds are as unique as in their appearance. Whether the site chosen for a nest be high up almost out of sight, or on a slanting branch close at hand, the nest is usually set astride the limb like a saddle on a horse, instead of being supported by a hand-like series of crotches. An unused nest that I have now before me shows very perfectly the materials from which it was made. Next to the maple branch, less than half an inch thick, is a layer of the soft scales that fall on the opening of spruce buds; the body of the nest is of fern wool, mixed with the down of some composite smaller than the ordinary dandelion. The outside is shingled with cedar-tree moss, as well as a few of the dark scales of spruce bark.

In this nest, the edge is quite loose and fluffy, and the structure itself is rather small, being not over an inch above its foundation. In this case, the home was, for some unknown reason, abandoned immediately after the eggs were laid; had the birds been hatched, the nest would have given them but poor protection. The condition of this nest is apparently explained by two cases that I have watched in the garden, when, after the young were hatched, the mother bird *built up the nest about them as they grew!* For this reason, the nests found in autumn, or at least after they have cradled the pair of birds that come from the white, bean-like twin eggs, often bear on the outside a distinctly two-storied appearance, the lichens of the top part being of a slightly different color from the base. I say the *mother* bird builds up the nest about her young, for there is no proof that the *male* Ruby-throat takes any part in the home life after the first nest-building; that is, he has never been seen either to assist in the brooding or the feeding of the young, by an accredited observer.

Why this is no one really knows. It cannot be on account of his colored throat and the law of color protection, or from the danger of betraying the nest, for Tanagers, Rose-breasts, and Baltimore Orioles assist in the feeding of

their young. Perhaps it may have to do with the very quick tempers of the pair; incubating may prove very trying to Mrs. Ruby, and so her spouse thinks discretion the better part of valor!

After the nesting season is over, the males are seen again about the flowers, though greatly outnumbered by Hummers lacking the ruby throat. This, however, is easily accounted for by the fact that the young of the year, both males and females, are plumed like the mother.

One spectacle concerning the home life of the Ruby-throat is rather awful until you fully understand the cause, and know that the mother is not trying to choke her children to death. She feeds them by regurgitation; that is, she pumps the food, first softened in her own crop, down the little throats by means of her own beak, which she thrusts into their gaping mouths. Early bird students saw this process the other way about, saying that Hummers, Pigeons, etc., pushed their beak into their parents' crops for food,—hence the term "sucking doves."

In the Hummingbird, we have a species that makes its appeal through beauty of form and grace of flight, rather than through any economic consideration. Beauty as an excuse for being has, however, long since been accepted as a fact. And yet it was through beauty that, at one time, this elusive little bird was almost doomed to extinction, for it is not so many years ago when a wreath of Hummingbirds upon a festal hat was not a rare sight. Public opinion, in the United States at least, will no longer stand for such senseless waste and barbarity. Of no use for food, a difficult prey for either cat or snake, the Ruby-throat should escape most of the ills that befall our native birds, and continue with us when larger birds grow rare. Of course, there are always the difficulties of migration to be considered, with the modern danger of electric lights added to the old one of the light-houses, to the lure of which so many feathered creatures yield their lives. For when we consider that this little bird not only nests from Florida up to Labrador, but winters in Central and South America, it is necessary that many must fall by the way.

Unlike many species of unique plumage or tropical colors, the Hummingbird family belongs entirely to the New World, being most numerous in the mountains of South America. Of the five hundred or more known species, only eighteen reach the United States and but few of these pass far north of our Mexican boundary.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

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Any person, club, school or company in sympathy with the objects of this Association may become a member, and all are welcome.

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\$5.00 annually pays for a Sustaining Membership

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Massachusetts Legislation

After one of the most strenuous campaigns ever waged in Massachusetts for game protection, a law has just been enacted which prohibits the sale of native wild game in that state. Provision is also made for encouraging the propagation of game by permitting the sale of certain species if reared in captivity. Foreign game of certain forms not likely to be confused with native species is also permitted to be sold. Abuses of these privileges are guarded against by a system of tagging, which appears to be working as well in New York at the present time. A bag-limit bill was also passed, which regulates the amount of game that a man may take in any one day.

These features were most furiously opposed, especially by the market gunners of Massachusetts and certain of the dealers who have been profiting by selling game in the past. Opposed to these men who are working for self interest were the various State and National organizations which are interested in the preservation of wild life in Massachusetts.

Mr. E. H. Forbush, the New England Field Agent of this Association, conducted a campaign of publicity with an amount of labor which can hardly be realized by one never engaged in such an enterprise.

The Association was also ably represented by a Boston attorney employed

for the purpose. Not only were we engaged in helping to secure this constructive legislation, but we were forced to put forth heroic efforts to prevent the repeal of the anti-spring-shooting law. Five bills were introduced in quick succession at the instance of the commercial Duck shooters, with the hope of again opening up spring shooting.

The expenses of the Massachusetts campaign have drawn heavily on the resources of the Association, but we feel amply repaid by the splendid results.

The time has come in our civilization when, if our wild game birds are to be saved (and they shall be saved), we must stop commercializing them. As long as an open market can be found for Ducks, shore-birds, Grouse and Quail, just so long will there be found hundreds and thousands of men who will make a business of taking advantage of the laxity of the laws by slaughtering these birds for sale. In their utter disregard of the final results, many of these men take every possible advantage of the wild creatures, and often secure them at seasons, and by methods, and at times in direct violation of the statute. When the good day comes on which it shall be illegal to sell native wild game in any market in the United States, we may feel that we are then well on the road to repopulating the depleted covers with a bird population similar to that found here by our fathers.—T. G. P.

Oregon

Our Northwestern Field Agent, Mr. William L. Finley, State Game Warden of Oregon, has just successfully transplanted a herd of fifteen elk from Jackson Hole, Wyoming, to the Chesninnimus Forest, in Wallowa county, Oregon.

This is the first time that so large a herd has been transferred so great a distance under such difficulties and over roads so bad. The elk were crated and hauled on sleds for ninety miles over the almost impassable Teton Pass, at an elevation of more than eight thousand feet, and with the snow from ten to forty feet deep. They were then transferred to a box car at St. Anthony, Idaho, and, after four days on the railroad, were delivered at Joseph. From this point they had twelve days of travel on wagons through more than thirty miles of mud, and by sled through ten miles of snow so deep that the roads had to be broken out as the teams went along.

During the first stage of the journey from Jackson Hole, a snow storm of such severity was encountered that it required four days to traverse twenty-eight miles. The strain of the travel was so severe on the elk that, when they reached St. Anthony, they were released and allowed a day's rest in a corral.

Readers of BIRD-LORE are already aware of the starved condition of the elk in Jackson Hole, during the winter, which has existed until recently, and will, therefore, rejoice to know that a nucleus from this congested point has been provided for the establishing of a herd in Oregon, under more satisfactory conditions.

In regard to Mr. Finley's general work of late in the interest of wild-life protection, he writes under date of May 6, 1912:

"I am just completing arrangements for a state reserve on private property adjoining the Malheur reserve, which will be of importance to us because the only colony of White Herons in that part of the country are nesting on this land. I have also completed arrangements for some 30,000 acres in the southeastern

section of the state, in the Catlo Valley, to be used as a reserve for the protection of antelope.

"We have been pushing the matter of getting lands in different sections of the state set aside as wild-bird refuges, and up to date we have some very important reserves in addition to our Government reserves."

Mr. Finley has given twenty public addresses in the state during the past few weeks, and reports that much interest is being shown in bird work by the school children, and in many places much attention is being given to the construction of boxes to be used as nesting-places for birds.—T. G. P.

Florida

The writer recently returned from an exceedingly interesting trip to Florida, where he went in the interest of the general Audubon work, and with special reference to Egret protection.

Mosquito Inlet Reservation was visited, where Warden Captain B. J. Pacetti was found faithfully patrolling the twenty miles of territory in which thousands of birds of many species find a safe retreat. Twenty-one Snowy Egrets were counted here, although they do not have a nesting-place on the reservation.

On Pelican Island, in Indian River, several hundred Pelicans were seen sitting on eggs which were just beginning to hatch, a cold wave a few months previously having destroyed the young of the first laying. They are carefully protected by warden Paul Kroegel, who visits the island constantly in the Association's patrol boat "Audubon."

At Key West, the wife of Warden Guy Bradley, who was killed by plume-hunters some years ago, was visited. With her family, she is living in the home purchased for her by the members of this Association shortly after the tragic death of her lamented husband.

Several places on the Gulf Coast were inspected, as well as a number of points inland. At St. Petersburg the protected



BROWN PELICANS AT ST. PETERSBURG, FLORIDA, PROTECTED
BY THE AUDUBON LAW

Photographed by T. H. Jackson



SMALL SECTION OF BIRD ISLAND, ORANGE LAKE, FLORIDA. ABOUT NINE ACRES
ARE THUS DENSELY POPULATED BY THE PROTECTED BREEDING BIRDS

Photographed by Warden O. E. Baynard

Pelicans were especially tame. Near Archer, in Alachua county, two days were spent in the saddle, visiting the lakes, prairies and ponds where in boyhood the writer had found Egrets and other Herons by thousands. The result of these rides was most depressing. Over the many miles of territory covered, the only Herons seen were a Little Blue Heron and one Black-crowned Night Heron.

The utter disappearance of the many Herons which do not produce the aigrette of the trade was universally explained locally by the statement that the birds had been destroyed by Northern tourists, who, having little to do during the period of their several months' sojourn in the state, wandered about shooting at pleasure any strange bird which they chanced to meet; the killing evidently having been done for the mere joy of holding in the hand for a few moments a bird of striking and unusual appearance.

At Orange Lake, however, something of the old-time abundance of bird life was encountered. Here, on Bird Island, purchased last year by the Association with the interest from the Mary Dutcher Memorial Fund, exists one of the largest and most interesting colonies of water-birds found today in Eastern United States. An extensive report regarding this wonderful nesting-place accompanied the last Annual Report of the Association. Egrets, Snowy Egrets, Little Blue Herons, Louisiana Herons, Black-crowned Night Herons and Green Herons were all found nesting here. Six specimens of the rare Glossy Ibis were seen at one time. It is conservative to say that fully four thousand pairs of White Ibises are now breeding on Bird Island. Their nests seem to cover almost every available limb of the low trees and bushes which grow on the island. Some of the nests, with their beautifully spotted treasures, were within fifteen inches of the ground; others were at an elevation of fully eighteen feet.

Warden O. E. Baynard guards the colony, and, as he lives not more than one mile away and is almost constantly about the island or on the near-by shore,

it would be a difficult matter to raid the colony without his knowledge. About four o'clock in the afternoon, long ranks of White Ibises were seen coming across the lake toward the island, from their feeding-grounds on the prairies and lake shores to the northwest. As the sun sank lower, these flocks increased in number until twilight, when an almost continuous stream of white birds could be seen winging homeward to the one spot in all that part of Florida where their lives are safe from the depredations of the gunner.—T. G. P.

New Members

March 1 to May 1, 1912.

Life Member:

Mrs. George E. Adams

New Contributor:

Mr. Luther Kuntze

Sustaining Members:

Mr. Alexander McPhearson
Mrs. Alexander McPhearson
Mrs. E. S. Hamlin
Mrs. L. C. Kimball
Lewisoohn Importing & Trading Co.
Mrs. C. A. Kent
Mrs. Charles H. Collins
Mr. W. G. Henry
Mr. Gilbert H. Groosvenor
Mr. J. L. Judson
Mr. Eversley Childs
Mrs. C. S. Chase
Mr. W. L. Chamberlain
Miss Laura Vanderbilt
Mrs. J. N. Camden
Mrs. Frederick T. Mason
Mrs. A. T. Cabot
Mr. Herbert C. Merrill
Miss Louie Andrews
Mrs. C. H. Ditson
Mrs. H. J. Lewis
Evansville Audubon Society
Miss Elizabeth F. Wells
Mrs. Charles S. Fairchild
Mrs. W. D. Russell
Mr. James M. Motley
Miss Ella Brown
Miss Carrie G. Davis
Mr. A. F. Holden
Mr. Irwin Krohn
Miss Elizabeth L. Smith
Miss Harriet P. Abbe
Mr. J. R. Van Brunt
Mrs. T. M. Dillingham
Mrs. A. R. McClymonds

Sustaining Members, continued.

Mr. A. H. Childs
 Mr. William H. Burr
 Mr. Edwin R. A. Seligman
 Mrs. George P. Putman

Fund for White Egret Protection

Gratifying indeed have been the responses to the recent appeal made by the Directors of this Association for funds with which to push a vigorous campaign this year for the further protection of the White Egrets, whose extermination in the United States is so sorely threatened.

As has been before pointed out, a fund of \$5,000 should be available at the earliest possible moment, in order to locate and guard the comparatively few places where these birds still gather in summer to rear their young, and also to carry forward a campaign of publicity, so necessary to successful legislative efforts which we shall immediately push in Pennsylvania and elsewhere, with a view of stopping absolutely the nefarious traffic in the plumage of these exquisite creatures.

Since the last issue of BIRD-LORE, the following contributions have been added to the Egret Protection Fund and we very much hope that before the next two months elapse the entire fund of \$5,000 will have been subscribed.

Two additional colonies of Egrets have recently been located in the southern swamps, and wardens have been employed to guard them. At this writing, the Association has four agents in the field, searching for other nesting groups of these rare birds.

LIST OF SUBSCRIBERS

Previously reported.....	\$342 76
Miss Annie B. Chapman.....	2 00
Mrs. E. P. Hammond.....	3 00
Mrs. Alice Winstead.....	1 00
Mr. Wm. B. Evans.....	2 00
Mr. Robert P. Doremus.....	25 00
Mr. Charles E. Bell.....	1 00
Dr. Herbert R. Mills.....	2 00
Mr. M. S. Crosby.....	5 00
Mr. James P. Garrick.....	1 00
Mr. John L. Cox.....	10 00
Mr. Wm. S. Essick.....	1 00
Mr. John A. Stoughton.....	5 00

Carried forward.....\$400 76

LIST OF SUBSCRIBERS, continued

Brought forward.....	\$400 76
Mr. Lucius L. Hubbard.....	5 00
Mr. E. Blackwelder.....	2 00
Detroit Bird Protecting Club	5 00
Miss Helen P. Haskell.....	2 00
Dr. William H. Bergtold.....	5 00
Mr. Julian Tinkham.....	10 00
Mr. Edwin Gould.....	50 00
Miss Annie Stevenson.....	5 00
Miss Emily Belle Adams.....	1 00
Mr. Arthur Goadby.....	14 24
Miss Anne M. Cummins.....	5 00
Miss Elizabeth L. Cummins.....	5 00
Mr. Thomas H. Jackson.....	5 00
Mrs. C. R. Miller.....	5 00
Miss Louise deF. Haynes.....	5 00
Mr. Edward L. Parker.....	50 00
Mr. William P. Shannon.....	10 00
Miss Amelia Goodwin.....	2 00
Dr. F. P. Sprague.....	10 00
Mrs. R. J. Cross.....	25 00
Mrs. E. H. Godeffroy.....	5 00
Mr. Henry W. Shoemaker.....	500 00
Mrs. C. L. Best.....	2 00
Miss E. E. Timmerman.....	1 50
Mrs. M. F. Cox.....	5 00
Mrs. Julia S. Winterhoff.....	5 00
Miss Fannie G. Dudley.....	1 00
Miss Mary L. Bond.....	1 00
Mr. J. G. Baldwin.....	1 00
Mr. K. N. Bolles.....	1 00
Miss Charlotte Butler.....	1 00
Miss Mary P. Allen.....	30 00
Mrs. C. C. Auchincloss.....	1 00
Mr. E. H. Kidder.....	1 00
Mr. C. C. Curtis.....	5 00
Mr. K. L. Camman.....	25 00
Miss Anna W. Hubbard.....	5 00
Mr. Elbert H. Gary.....	10 00
Mr. Daniel S. Hage.....	1 00
Mr. David W. Harness.....	1 00
Mr. Frederick S. Lee.....	5 00
Mrs. Buckley.....	1 00
Mrs. H. P. Hodson.....	2 00
Mr. Jacob Bertschman.....	2 00
Mr. Theodore L. Bailey.....	5 00
Mr. W. T. Peoples.....	1 00
Mrs. R. W. DeForest.....	5 00
Mr. V. H. Jackson.....	5 00
Mrs. H. L. G. Walters.....	3 00
Mrs. P. H. Barhydt.....	5 00
Mr. Arthur D. Gabay.....	3 00
Mrs. R. P. Huntington.....	10 00
Mrs. L. F. Beckwith.....	2 00
Mr. S. Prescott Fay.....	5 00
Mr. Frederick M. Pederson.....	1 00
Mr. Dudley Olcott.....	1 00
Mr. Max E. Butler.....	1 00
Mrs. William H. Bliss.....	25 00
Mrs. M. L. Morgenthal.....	1 00
Mrs. J. P. Morgan, Jr.....	5 00
Mr. S. H. Olin.....	1 00

Carried forward.....\$1,313 50

LIST OF SUBSCRIBERS, continued

Brought forward.....	\$1,313 50
Mrs. V. E. Macy.....	10 00
Mr. Geo. W. Crossman.....	10 00
Mr. John I. D. Bristol.....	5 00
Mr. James D. Foote.....	2 00
Mrs. George D. Mason.....	10 00
Mr. C. P. Farrell.....	3 00
Mr. John O. Enders.....	3 00
Miss Frances Phelps.....	2 00
Mr. George W. Collord.....	5 00
Miss Anna K. Barry.....	2 00
H. S. Benjamin.....	5 00
Mr. E. Phillips Burgess.....	2 00
Miss Marietta Bryan.....	1 00
Mr. Fred. Sauter.....	2 00
Mrs. Temple Bowdoin.....	25 00
Miss Frances M. Ward.....	10 00
Mr. E. E. Knapp.....	1 00
Mr. Edwin R. Seligman.....	1 00
Mr. H. C. Bullard.....	2 00
Mr. C. K. Carpenter.....	2 00
Mr. Jesse E. Hyde.....	2 00
"A Friend".....	1 00
Dr. L. Weber.....	1 00
"F. F. S.".....	1 00
Mr. K. G. Falk.....	1 00
Mr. Geo. A. La Vie.....	5 00
Mr. Horace White.....	5 00
"Periptyery".....	5 00
Mr. W. H. Lappy.....	5 00
E. Tyro Fell.....	3 00
Rev. E. Peabody.....	5 00
Mr. Charles Raht.....	5 00
Mr. C. Seitz.....	1 00
Mrs. John J. Chapman.....	2 00
Mr. Coleman Randolph.....	5 00
Miss Fanny Randolph.....	5 00
Mr. Francis J. Cogswell.....	1 00
Mr. Bernard M. Baruch.....	1 00
"W. M. B.".....	1 00
Mrs. M. E. Dwight.....	2 00
Miss Anna R. Spring.....	5 00
Mr. Wm. H. Thompson.....	1 00
Mr. C. S. Shepard.....	10 00
Mrs. M. S. Holt.....	10 00
Mr. Richard M. Hoe.....	50 00
Mr. E. C. Canfield.....	2 00
Mr. Gustav Ramsperger.....	1 00
Mrs. John S. Kennedy.....	5 00
Mr. Edwin S. Casey.....	2 00
Mr. Rowland G. Hazard.....	5 00
Mrs. John V. Farwell, Jr.....	2 00
Mrs. Charles T. Olmsted.....	1 00
Mrs. E. A. S. Clarke.....	1 50
"E. B. F.".....	5 00
Mr. A. P. Smith.....	1 00
Mrs. H. M. Schieffelin.....	5 00
P. J. Oettinger.....	1 00
Mrs. Michael Piel.....	5 00
Dr. Herbert I. Wheeler.....	2 00
"A Friend" C. G. A.....	2 00
Mrs. Morris K. Jesup.....	5 00

Carried forward.....\$1,595 00

LIST OF SUBSCRIBERS, continued

Brought forward.....	\$1,595 00
Rev. W. T. Crocker.....	2 00
Mr. Charles R. Saul.....	2 00
Mr. Thomas H. O'Connor.....	5 00
Mrs. C. G. Williams.....	5 00
Mrs. Lowell Lincoln.....	1 00
Mr. Fred. T. Busk.....	5 00
Mrs. Emerson Opdycke.....	2 00
Miss Augusta D. Hopkins.....	2 00
Mrs. F. N. Doubleday.....	5 00
Mr. Fritz Achelis.....	5 00
Mr. Charles S. Davidson.....	3 00
Mr. R. L. Cutter.....	10 00
Mr. W. R. Kip.....	10 00
Mrs. J. R. Gladding.....	10 00
Mr. Walther Liittgen.....	5 00
Mr. A. M. Guinzburg.....	10 00
Mr. Charles H. Raymond.....	25 00
Mrs. S. B. Chittenden.....	1 00
Mr. William T. Hunter, Jr.....	1 00
Mrs. H. E. Cobb.....	1 00
Mr. W. E. Baker.....	1 00
Mr. M. F. Walton.....	1 00
Mrs. G. H. Vaillant.....	2 00
Mrs. R. M. Hoe.....	50 00
Mr. R. M. Baldwin.....	2 00
Mr. E. W. Sturgis.....	2 00
Miss Laura B. Garrett.....	1 00
Mr. William Allen Butler.....	1 00
Mrs. N. E. Baylis.....	1 00
Mr. Edwin H. Pink.....	1 00
Mrs. E. McPeters.....	1 00
Mr. James M. Motley.....	5 00
Mr. John B. Simpson.....	1 00
Hackettstown Bird Lovers ..	97 50
Mr. A. R. Bailey.....	2 00
Mr. H. C. de Rham.....	10 00
Mrs. Edward Holbrook.....	5 00
Miss Effie Bynill.....	1 00
Mrs. John H. Hammond.....	5 00
Mrs. Anna Von Zedlitz.....	1 00
Mr. Jonathan Thorne.....	10 00
Mrs. Henry Draper.....	5 00
Mr. M. E. Holden.....	1 00
Mr. R. M. Barnes.....	5 00
Miss Marianne Schurtz.....	5 00
Mr. Alonzo B. See.....	25 00
Mr. James M. Duane.....	5 00
Mr. E. G. Smith.....	1 00
Mr. J. H. Foote.....	2 00
Miss Virginia H. Butler.....	2 00
Mr. Edwin H. Brown.....	1 00
Mrs. Edward Cohen.....	5 00
Mr. C. E. Ehinger.....	1 00
Mr. Charles S. Schultz.....	1 00
Mrs. L. L. Abbott.....	1 00
Mr. William B. Royce.....	5 00
Mrs. A. R. McClymonds.....	45 00
Mr. Theodore R. Hoyt.....	25 00
Mr. William D. Ellis.....	10 00
Mrs. J. W. Chapman.....	1 00
Miss M. A. Tappan.....	1 00

Carried forward\$2,032 50

LIST OF SUBSCRIBERS, continued

Brought forward.....	\$2,032 50
Mr. H. E. Ferry.....	1 00
Mr. Wm. R. Peters.....	2 00
Mr. Robert M. Gallaway.....	25 00
Miss Rosalie L. Davis.....	2 00
Miss Carola Warburg.....	1 00
T. Hassal Brown.....	5 00
Miss Helen Scofield.....	5 00
Mr. A. H. B. Jordan.....	5 00
Mrs. James Talcott.....	1 00
Mrs. Charles MacVeagh.....	2 00
Mrs. Augustus Thorndike...	5 00
Mr. Wm. J. Hoe.....	1 00
Mrs. H. H. Rogers.....	10 00
Miss Lina C. Manning.....	1 00
Miss Lillian Cleveland.....	1 00
Mr. Leonard J. Manning....	1 00
Mrs. E. S. Pegran.....	5 00
Mrs. George B. Chase.....	2 00
Mr. Johnson.....	1 00
Miss Juliet T. Goodrich.....	5 00
Mr. W. C. Gannet.....	1 00
Miss M. F. Gannet.....	1 00
Mr. C. K. Gannet.....	1 00
"A Friend".....	1 00
Mr. Herman Behr.....	1 00
Rev. D. S. Dodge.....	5 00
Mrs. Lidian E. Bridge.....	5 00
Mr. A. P. Ehrich.....	5 00
Mr. Bayard H. Christy.....	10 00
Anonymous Contributions ..	43 00

Total amount to date\$2,186 50

Notes on Junior Audubon Classes

The plan of organizing Junior Audubon Classes for simple bird-study, as has

heretofore been outlined to our readers, is meeting with a most hearty reception in the schools both in the northern and southern states. Many of the classes are doing much practical work aside from the study of the subject.

Miss Mary E. Herron, of Memphis, Tenn., has sent the accompanying photograph of the members of her class displaying the bird-boxes which they have made.

Hundreds of letters have been received from teachers expressing their hearty approval of this new undertaking, which the National Association has been able to offer because of the generous contributions of Mrs. Russell Sage and an anonymous friend.

Mrs. M. R. Salter, a teacher in Ocean City, N. J., adding four members to a class which she had previously organized, writes: "The exceptionally attractive leaflets and pictures, to say nothing of the pretty buttons, have awakened much interest in children as yet outside of the Society. But, behind the novelty, I have been interested to see that the idea of bird-study and bird-protection really appeals to the children."

Miss Adelaide C. Fitch, teacher of a Junior Audubon Class in the Spruce Cottage School, at Vineland, N. J., writes: "My entire class are enjoying the work very



RIVERSIDE JUNIOR AUDUBON CLASS, ORGANIZED BY MISS MARY E. HERRON, MEMPHIS, TENNESSEE

much. Last week we went for a walk in the woods and secured a number of last year's nests for our collection. We are also studying the ways of the Robin, Blue Jay, Song Sparrow and Wren."

Mr. Roderick B. Thaw writes from New Germantown, N. J.: "My pupils are very much interested in the work, and the movement meets with the approval and hearty coöperation of the parents."

Mrs. L. S. Gillentine, Murfreesboro, Tenn., says: "Our Junor Class is growing in numbers, is very much interested, and is doing beautiful work. I have never seen more enthusiasm displayed in my teaching experience of sixteen years."

Prof. C. E. Bender, principal of the high school of Oakland, Md., has written: "Yesterday we organized with a membership of forty-nine students. Herewith I enclose check for \$4.90 for membership fees, in exchange for literature and buttons. I think the Audubon Society is a great Association."

Miss Laura L. Faucett, of Lenoir, N. C., reports: "The members of the class are delighted with their leaflets and buttons. They are going to give a bird-day program before the school tomorrow, which will, I am sure, increase the interest in bird-study."

Miss Sallie O. Ewing, who conducts an Audubon Class in the Roanoke, Va., schools, says: "The birds are all coming back from the South, and the children have been busy getting ready for them by nailing up chalk-boxes and other receptacles for nesting-places. Their little faces beam with delight as they tell me each day of new arrivals, sweet songs, etc., and they are eager to care for the birds and protect them. I am sending a list of teachers who are interested in birds, and who will be glad to receive sample leaflets and learn of your plan of organization."

The officers of a number of the State Audubon Societies are coöperating with the National Association in pushing this highly important phase of our work and we hope eventually to extend it throughout the country.—T. G. P.

New York Bird and Game Law

On April 15, Governor Dix signed the New York Conservation Law, which carried with it a re-codification of the state's game laws. This re-codification is calculated to clear away the confusion and chaotic condition resulting from an accumulation of laws which had been added from year to year and many of which were more or less conflicting.

One of the provisions of the new law is that any citizen may complain of insufficient protection to fish or game, and be accorded a hearing on such complaint within twenty days.

Another provision permits the Commission to grant relief to the owner of any property on which protected species become destructive; birds or quadrupeds in question being disposed of by a State Protector under the direction of the Commission. The Commission believes that fewer laws and an ever-increasing vigilance in their enforcement will result in more game.

The new measure provides for the increase of game protectors from ninety-five to one hundred and twenty-five. The state is declared to be the owner of all wild fish and game for the purpose of controlling the capture or killing of same. Prohibition of sale of fish, birds or quadrupeds is an important part of the present law.

The laws have now been made more uniform, and will doubtless tend to be more generally popular because more liberal, while tending at the same time to afford greater protection to birds and game.

In the portion of the statute that deals with birds, there are several distinct gains. Geese, Brant and Ducks still have the same open season, i. e., September 15 to January 10, but there is a permanent close season established for Swans and Wood Ducks. The total bag limit for all species combined is twenty-five to each hunter, and forty for two or more persons in the same boat, battery or blind in one day. Rails, Coots and Mud Hens

may be taken from September 15 to December 31. The bag limit is fifteen to one person, and twenty-five when two or more hunters shoot from the same blind or boat.

A proposition to establish a permanent close season on the Bob-white failed, and an open season from October 1, to November 15, with a bag limit of six birds in a day and thirty-six in a season, was established. The open season on Grouse, or partridge is from October 1, to November 30, the bag limit being four a day or twenty a season.

The open season for Pheasants has been again reduced to Thursdays in the month of October, and three cock birds are all that may be taken in a season by one man. Lovers of native birds will be interested in the claim that the extensive shooting of Pheasants has tended to reduce the destruction of our native Ruffed Grouse.

The open season on Woodcock is from October 1 to November 15, the bag limit four a day and twenty a season.

For Snipe, Plover and other shore birds, the open season is September 16 to November 30—bag not to exceed fifteen; total of all species in one day, and not over twenty-five to be killed from the same boat or blind.

The Starling has been included in the list of birds exempted from protection.

An attempt to include the Bittern in this list was fortunately not successful.

The law prohibits hunting on public highways, except in forest-preserve counties, and upon municipal water-works property.—T. G. P.

Notes from the Field

MRS. FLORENCE L. SMALL, President of the Iowa Audubon Society, whose home is at Waterloo, has been very active of late in the matter of arousing sentiment for bird-protection in Iowa. With a life so full of other duties that many would be discouraged from attempting outside work, she has found time to give public talks frequently before women's clubs, the

schools of her home city, and conservation conventions.

Some time ago she was appointed a member of the Conservation Committee of the State Federation of Women's Clubs. She realizes the opportunity this appointment gives her to bring the subject of bird-study and bird-protection before the large audiences which bi-annually gather at the State Conservation Conferences.

By a very slender majority, the Audubon bill to establish a State Game Commission in Virginia was defeated during the closing days of the legislature. Far from being discouraged by this fact, the Legislative Committee, headed by Mr. J. C. Wise, at once undertook an extensive campaign of education, and there is every reason to believe that sufficient enthusiasm will be aroused in the state to result in the enactment of a measure of this character at the next meeting of the State Legislature.

Letters are being distributed widely throughout the state, calling upon sportsmen and others interested in the conservation of wild birds and animals to extend financial support to the Committee, and farmers are being called upon to send in letters stating their views on the desirability of the state extending such protection to the wild bird life as an efficient warden force would insure. Encouraging answers are being received daily, and Mr. M. D. Hart, writes that \$200 have already been pledged for the purposes of the Committee.

PLEASING additions to the Egret Protection Fund are those sent in by Miss Mary P. Allen, of Hackettstown, New Jersey. Under date of April 16, she forwarded a personal contribution of \$30 and wrote that she and some friends were holding a sale of home-made cake, bread, candy, etc., the returns from which would be added to the fund within a few days. On April 23 the sum of \$33 was received from this source.

On May 2, an entertainment was held under Miss Allen's direction, for the purpose of still further increasing the Hack-

Hackettstown contributions to the Egret Protection Fund, and the amount thus collected was \$64.50. The last two contributions, Miss Allen asked to have credited in the name of the "Hackettstown Bird Lovers." Here is a suggestion for those in other localities who desire to do something effective toward preventing the extermination of some of the most beautiful birds of this country.

THE epidemic of poisoning birds in the South has again broken out, this time in Texas, where planters are complaining of the depredations of Blackbirds on their growing crops.

Capt. M. B. Davis, the field agent of the National Association, has had his hands full in combating this evil, and his letters and newspaper articles on the subject have been distributed to all parts of the state. Capt. Davis, who has contended that the Blackbirds may be driven out of a given neighborhood by a lusty fusillade of blank cartridges, recently conducted a demonstration in Hill county. A night attack in this way was made on a large Blackbird roost, with the result that the birds left the region.

Not only have Blackbirds been destroyed in numbers by the poison put out by farmers, but many other birds have suffered a like fate. Our agent reports that about the fields where this poisoning process is in operation, he has frequently found many dead birds of other species "In one place," he says, "we found dead Plover, Red Birds, Mockingbirds, and a Flicker," all of which had partaken of poisoned food intended for the Blackbirds.

It is an exceedingly unwise plan to distribute poison about fields for the purpose of destroying any species of bird life, regardless of how detrimental it may be locally considered, as many harmless and useful species are sure to suffer death as a result.

THE following "notice," printed in large type and extending over a space double column in width, has recently appeared in the public press of Memphis, Tennessee:

"Our city and county authorities are coöperating with the United States Government and the National Association of Audubon Societies for the protection of the song and insect-eating birds. They are doing this not merely from humanitarian motives, but because of the incalculable value of these birds to the farmer in protecting his crops from the ravages of insects.

"Notwithstanding the growth of public sentiment in favor of bird-protection, and the dissemination of knowledge on this subject through the public schools, men and boys are continually shooting these birds in and around the city and our parks.

"The City of Memphis and the authorities of Shelby County have appointed a committee to guard the interests of the birds in Memphis and Shelby County. This committee is composed of Dr. R. B. Maury, Lem Banks and Bolton Smith. Citizens are requested to report to this committee any injury that may be done by thoughtless persons to the birds of their neighborhood. Information thus received will be at once brought to the Department of Police, and laws for the protection of these birds will be enforced."

This is signed for the City of Memphis by R. A. Utley, Acting Mayor, and for the County of Shelby by W. A. Taylor, Chairman, Board of County Commissioners. This unusual method of co-operation by municipal and county authorities for the welfare of the wild birds is but another evidence of the tireless activities of Dr. R. B. Maury, President of the West Tennessee Audubon Society.

PRICE-LIST of LITERATURE

PUBLISHED BY THE

National Association of Audubon Societies

1974 BROADWAY, NEW YORK CITY

Leaflets, with uncolored plates (except Nos. 2 and 6).

	Per doz.		Per doz.
1. Nighthawk.....	\$o 09	9. Red-shouldered Hawk.....	\$o 09
2. Mourning Dove, colored plate..	24	10. American Sparrow Hawk.....	09
3. Meadowlark.....	09	11. Screech Owl.....	09
4. Robin.....	09	12. Short-eared Owl.....	09
5. Flicker.....	09	13. Ostrich.....	09
6. Passenger Pigeon, colored plate	24	14. Barn Owl.....	09
7. Snowy Heron.....	09	15. Yellow-billed Cuckoo.....	09
8. Marsh Hawk.....	09	16. Tree Sparrow.....	09

Leaflets, with colored illustrations and outlines

	Per doz.		Per doz.
17. American Goldfinch.....	\$o 18	36. The Mallard, (special 19).....	\$o 24
18. Cardinal.....	18	37. Sharp-shinned Hawk.....	24
19. Belted Kingfisher.....	18	38. Bobolink.....	24
20. Rose-breasted Grosbeak.....	18	39. House Wren.....	24
21. Scarlet Tanager.....	18	40. Bush-Tit.....	24
22. Blue Jay.....	18	41. Mockingbird.....	24
23. Killdeer.....	18	42. Orchard Oriole.....	24
24. Bluebird.....	18	43. Red-headed Woodpecker.....	24
25. Red-winged Blackbird.....	18	44. Franklin's Gull.....	24
26. Baltimore Oriole.....	18	45. Black-headed Grosbeak.....	24
27. Indigo Bunting.....	18	46. Robin.....	24
28. Purple Finch.....	18	47. Bob-white.....	24
29. Herring Gull.....	15	48. Cedar Waxwing.....	24
30. Snowflake.....	18	49. Chimney Swift.....	18
31. Song Sparrow.....	18	50. Carolina Wren.....	24
32. Barn Swallow.....	24	51. Spotted Sandpiper.....	24
33. Tree Swallow.....	24	52. Least and Semipalmated Sand- pipers.....	24
34. Ruby-crowned Kinglet and Golden-crowned Kinglet.....	18	53. Horned Lark.....	24
35. American Crossbill and White- winged Crossbill.....	18	54. The White Egrets.....	36

Special leaflets

	Per doz.		Per doz.
2. Purple Martin.....	\$o 09	12. October and Preparations for Winter.....	\$o 09
3. Bird Clubs in Schools.....	09	13. For December—Six Reminders.....	09
5. The Aigrette Loses Caste.....	09	14. The Cost of a Feather.....	15
6. Bartramian Sandpiper, colored plate.....	18	15. February Hints.....	09
7. February.....	09	16. Winter Feeding of Wild Birds.....	15
8. April, Nature Study Organiza- tions.....	09	17. Bob-white, the Farmer's Friend.....	09
9. In June.....	09	18. Putting up Bird-boxes.....	18
10. Wood Duck, colored plate.....	24	19. The Mallard, colored plate.....	24
11. August and the Flocking Time.....	09	20. How Our Birds Spend the Winter.....	09
		21. The Horrors of the Plume Trade.....	09

The above prices cover all transportation charges

Bird books of any kind on the market may be secured through this office

HOW TO ATTRACT AND PROTECT WILD BIRDS

By Martin Hiesemann, translated by Emma S. Buchheim

The results of the BARON VON BERLEPSCH's experiments with natural nesting-places and feeding arrangements. Price 40 cts.





1. CANON TOWHEE, Summer

2. CANON TOWHEE, Winter

3. CALIFORNIA TOWHEE

4. ABERT'S TOWHEE

(One-half natural size)

Bird = Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. XIV

JULY—AUGUST, 1912

No. 4

A List of Trees, Shrubs, Vines, and Herbaceous Plants Native to New England, Bearing Fruit or Seeds Attractive to Birds

By FREDERIC H. KENNARD, Newton Center, Mass.

IT WAS my privilege, last autumn, 1911, to be asked to design a planting plan for the development of the Bird Sanctuary of the Meriden Bird Club, at Meriden, New Hampshire. A large part of the property is already well wooded, and the principal problem was with regard to the planting and thickening of the present growth with trees, shrubs, vines, and perennials, that should be most attractive to the birds in that vicinity, and at the same time disturb as little as possible the natural aspect of the reservation.

In order to make such a plan intelligently, it was necessary to compile a provisional list of plants attractive to birds, from which to choose; and while this list is in no way complete, as it may be of interest to readers of BIRD-LORE, I have ventured to submit it below.

Those plants that are particularly attractive to birds are shown with three asterisks, while those with more than ordinary attractiveness, are shown by two or one asterisks, in the order of their attractiveness, and those species whose fruits seem to be eaten so seldom as to make their planting hardly worth while are marked with a cross.

DECIDUOUS TREES

**Acer negundo*, Ash-leaved Maple, Box Elder.

***Acer saccharum*, Sugar Maple.
And doubtless other maples.

Betula populifolia, American Gray Birch.

Betula lutea, Yellow Birch.

And probably other birches.

Celtis occidentalis, Hackberry.

Cercis canadensis, Red-bud.

****Cornus florida*, Flowering Dogwood.

†*Corylus americana*, American Hazel.

***Crataegus coccinea*, White Thorn.

** " *crus-galli*, Cockspur Thorn
And others of this genus.

†*Fagus americana*, American Beech

**Fraxinus americana*, American White Ash.

And probably other species.

†*Hicoria* sp., Several kinds of Hickory.

Ilex opaca, American Holly.

†*Liquidambar styraciflua*, Sweet Gum.

†*Liriodendron tulipifera*, Tulip Tree.

****Morus rubra*, Native Red Mulberry.

DECIDUOUS TREES, continued

- ***Nyssa sylvatica*, Tupelo.
Ostrya virginiana, Hornbeam.
 †*Plantanus occidentalis*, Sycamore.
 †*Populus* sp. Various species of Poplars are sometimes fed upon.
 ****Prunus pennsylvanica*, Bird Cherry.
 *** " *pumila*, Sand Cherry.
 *** " *serotina*, Black Cherry.
 *** " *virginiana*, Choke Cherry.
 ***Pyrus americana*, Mountain Ash.
 †*Quercus* sp. Several species of oaks.
Sassafras officinalis, Sassafras.
Ulmus americana, American Elm.
 And other species.

EVERGREEN TREES

- ***Juniperus virginiana*, Red Cedar.
 ** " *communis*, Prostrate Juniper.
 ***Picea alba*, White Spruce
 ** " *rubra*, Red Spruce.
 And undoubtedly other species.
 **Pinus rigida*, Pitch Pine.
 * " *strobus*, White Pine
 **Tsuga canadensis*, Hemlock.

SHRUBS

- ***Amelanchier canadensis*, Shad Bush.
 ***Benzoin odoriferum*, Spice Bush
 **Berberis vulgaris*, Barberry.
Comptonia asplenifolia, Sweet Fern.
Corema conradii, Broom Crowberry.
 ****Cornus alternifolia*, Blue Cornel.
 *** " *candidissima*, Gray Cornel.
 *** " *sericea*, Silky Cornel.
 *** " *stolonifera*, Red Osier Cornel.
 ***Gaylussacia frondosa*, Dangleberry.
 ** " *resinosa*, Huckleberry.
 ***Ilex glabra*, Inkberry.
 ** " *verticillata*, Black Alder.
 And probably *Ilex laevigata*, Winterberry Black Ilex.
Ligustrum vulgare, Privet.
 ***Myrica cerifera*, Bayberry.
Prunus maritima, Beach Plum.
 **Pyrus arbutifolia*, Chokeberry.
Rhamnus catharticus, Buckthorn.
 ****Rhus copallina*, Shining Sumach.
 *** " *glabra*, Smooth Sumach.
 *** " *toxicodendron*, Poison Ivy.
 *** " *typhina*, Staghorn Sumach.

****Rhus venenata*, Poison Sumach.

***Ribes floridum*, Large-flowering Currant.

***Ribes lacustre*, Swamp Gooseberry.
 And other species.

***Rosa*, sp. It is probable that the fruits of all the native wild roses are eaten largely by birds.

****Rubus occidentalis*, Thimbleberry.

*** " *strigosus*, Red Raspberry.

*** " *canadensis*, Low Blackberry.

*** " *villosus*, High Blackberry.

****Sambucus canadensis*, Common Elder.

*** " *pubens*, Panicked Elder.

Shepherdia canadensis, Shepherdia.

***Symphoricarpos racemosus*, Snowberry.

****Vaccinium cæspitosum*, Dwarf Bilberry.

****Vaccinium corymbosum*, High-bush Blueberry.

****Vaccinium pennsylvanicum*, Low-bush Blueberry.

(And doubtless other species including *Vaccinium vitis-idaea*, Cowberry).

***Viburnum alnifolium*, Hobble Bush.

** " *dentatum*, Arrow-wood.

** " *lentago*, Sheepberry.

** " *nudum*, Withe-rod.

** " *opulus*, High-bush Cranberry.

***Viburnum prunifolium*, Black Haw.

And doubtless *V. acerifolium*, *V. casinoides*, and other species.

VINES

***Ampelopsis quinquefolia*, Virginia Creeper.

Arctostaphylos uva-ursi, Bearberry.

Celastrus scandens, False Bittersweet.

Menispermum candense, Moonseed.

Mitchella repens, Partridge-berry.

Vaccinium macrocarpon, Cranberry.

" *oxycoccus*, Dwarf Cranberry.

**Smilax rotundifolia*, Bull Briar.

***Vitis cordifolia*, Frost Grape.

** " *labrusca*, Fox Grape.

** " *vilpina*, Frost Grape.

HERBACEOUS PLANTS

***Aralia nudicaulis*, Sarsaparilla.

Fagopyrum esculentum, Buckwheat.

HERBACEOUS PLANTS, continued

Fragaria virginiana*, Strawberry.*Gaultheria procumbens*, Checkerberry.*Helianthus annuus*, Sunflower.Phytolacca decandra*, Pokeberry.*Smilacina racemosa*, False Spike-
nard.*Solanum nigrum*, Nightshade.

I have included in the above list the common barberry (*Berberis vulgaris*) and the common privet (*Ligustrum vulgare*), because, although they were introduced species, they have now so spread over the country as to be classed as natives.

I should have liked to include the hackmatack (*Larix americana*) in this list, as well as the Norway pine (*Pinus resinosa*), but was forced to leave them out through lack of sufficient evidence of the birds feeding upon them. It is a matter of common knowledge that the buds and cones of the European larch are, in this country, very attractive to certain members of the Finch family; but I have been unable to get hold of proper data regarding the American larch, and the same is true of the Norway pine. I should have liked also to be able to include various of the honeysuckles (*Lonicera parviflora*, *ciliata* and *cærulea*); but was forced to leave them out for lack of proper data. I should have liked to be able to include the silver berry (*Elæagnus argentea*), the burning bush (*Eunonymus atropurpureus*), and the Indian currant (*Symphoricarpos vulgaris*), as all three of them are attractive to birds; but was forced to leave them out because, although they are planted frequently throughout New England, and originally came from areas just without its boundaries, I do not know that they are as yet growing wild here.

For help in compiling this list I am indebted to Mr. Walter Deane, of Cambridge, Mass., and to other members of the Nuttall Ornithological Club of that city, as well as to the following books on the subject:

Nature Study and Life, by Clifton F. Hodge.

Birds in Their Relation to Man, by Clarence M. Weed and Ned Dearborn,

Useful Birds and Their Protection, by Edward H. Forbush,

Methods of Attracting Birds, by Gilbert H. Trafton,

Birds of the Village and Field, by Florence A. Merriam.

Numerous reports of the Biological Survey, including

Food Habits of the Grosbeaks, by W. L. McAtee,

Food of the Woodpeckers of the United States, by F. E. L. Beal, and particularly to

Plants Useful to Attract Birds and Protect Fruit, by W. L. McAtee.



Observations in a Laughing Gull Colony

By FRANCIS HARPER, College Point, N. Y.

With photographs by the author

THE backbone, or dry portion, of Cobb's Island is shaped much like a fishhook with a long shank. At the south end, the narrow strip of sandy beach, piled high with windrow upon windrow of tossed-up oyster shells, curves westward, away from the sea, and then northward for a short distance, forming the point of the hook. Here the sand merges into the salt marsh that fringes the beach on its inner side, completely filling the hollow of the curve, and stretching on to the north, in a narrowing line of green, as far as the eye can follow. A number of little tide channels meander through the marsh, and here and there lies a shallow lagoon.

Beside one of the lagoons we found, on June 25, 1911, a breeding colony of about ten pairs of Laughing Gulls. As we approached, striding knee-deep through the rank marsh grass, the Gulls arose in the air, and flew toward us as if to protest against the intrusion. It was a matter of ease to locate their nests, built as they were in the open, and not overhung with bending grass-tops, as was a nearby Clapper Rail's home. Each of the nests was composed of a mass of the coarse dead stalks of *Spartina*, the common salt marsh grass; they were built up to a height of ten or twelve inches above the ground, and averaged perhaps two feet in diameter. Some of the birds had taken advantage of previous accumulations of drift, to which they added their nesting material. A shallow depression on the top contained the grayish, chocolate-spotted eggs.

Though the normal complement of eggs is three to five, and though the season was now far advanced, the nests contained only from one to three eggs apiece. For apparently every colony of Laughing Gulls, Skimmers, Terns, and Clapper Rails in that region must reckon with repeated visits of eggging parties, which for years have been the bane of the breeding birds of the Virginia coast. And the Laughing Gulls, owing to the conspicuousness of their nests and the esteem in which their large eggs are held, pay especially heavy toll to the eggers. The hatching of a brood must mean, in most cases, a very marked degree of patience and faithfulness on the part of the parent birds.

Late in the afternoon of that day, an exceptionally high new-moon tide, accompanied by a rainstorm of tropical violence, with thunder, lightning, and a magnificently impressive cloud display, threatened havoc among the nests of all the marsh birds. From the shelter of the club-house porch, at the tip of the sandy hook, we looked out over the flooded marsh, and could discern numbers of Clapper Rails, driven from their usual retreats, skulking about on top of the floating drift. We were more concerned, however, for the less common Laughing Gulls, some of which were then flying above their nests in the fast-gathering darkness and calling in alarm, as it seemed, at the rising flood.

Five days later, when we had an opportunity to visit the colony again, we were pleasantly surprised to find that the nests had suffered no apparent harm from the storm and tide. The first one to which I came was at the very edge of the lagoon, whose rippled waters, together with the long, glittering shell-heap on the beach beyond, would make, I thought, a very pleasing setting for a portrait of the Laughing Gull at home. Accordingly, I set up my umbrella tent at a distance of about twenty-five feet from the nest, and prepared to await the bird's return with some measure of the patient fortitude that the bird photographer, by reason of long practice, almost inevitably acquires. These periods of waiting, however, seldom prove really irksome; at such times alone, perhaps, during an active day in the field, is one enabled to give a neglected note-book the attention it demands. Furthermore, when one is



THE UMBRELLA BLIND IN THE LAUGHING GULL COLONY

provided with a comfortable seat in the shape of a drift-gathered box and may watch, unseen, numbers of unfamiliar and interesting birds about him,—for I was favored at this time in both respects,—hour after hour may pass pleasantly enough.

During the first few minutes, the birds of the entire colony kept circling back and forth overhead, concerned, no doubt, for the safety of their nests, but not showing so much excitability as a pair or two of Forster's Terns that came from a distance to scream hoarsely at the new feature in the landscape. Only now and then did the Laughing Gulls utter their high-keyed notes; and these varied to a marked degree at different times or with various individuals. The following are some of the variations that I attempted to jot down in my note-book: ka-áh; ke-háh; ha; ha-ha; ha-ha-ha; ke-á-hah. Several times, too, their strange laughter, not unlike the ordinary call-note, but much prolonged, sounded over the marsh.

Presently some of the Gulls began to hover about the more distant nests, generally making a false start or two before venturing to alight. Then one by one they dropped upon the edges of the nests, twitched their wings for a couple of moments as if to fix them smoothly in position, and remained for a time erect and alert; at last, becoming sufficiently reassured, they settled down upon their eggs, so that little more than their black heads and snowy necks appeared above the grass-tops. Meanwhile, some of the others, singly or in pairs, swam on the pool with the peculiar feathery lightness that so often arouses our admiration in a Gull, whether awing or afloat.

Two birds, at length, commenced to fly closer and closer to the nest in front of the blind, and, at the end of three-quarters of an hour or thereabouts,



NEST AND EGGS OF LAUGHING GULL

one of them (probably the female) alighted. Though frightened away more than once, either by the movements of my companion at the other end of the colony or by the noisy release of my focal-plane shutter, she returned without undue delay and began to incubate. I now had opportunity not only to expose plate after plate, but to observe at leisure the Laughing Gull's graceful symmetry and its rare beauty of plumage. Its dark reddish bill, black head and white-bordered eye, snow-white neck and breast, and pearl-gray, black-tipped wings, show to particular advantage in an autochrome exposed for four seconds on the motionless bird.

At a loud outcry from the sitting Gull, I peeped through a slit in the tent in time to catch a momentary glimpse of a skulking Clapper Rail, whose

comical impudence in stepping directly past the nest, at scarcely a yard's distance, had thus aroused the very justifiable resentment of the owner. She yelled likewise at the male when the latter dropped down beside the nest; and her vociferations seemed shortly to have the desired effect, for he arose in the air and did not offer to return. I was reminded of a remarkable similar demonstration, which had come to my notice at Gardiner's Island a few weeks previously, on the part of a female Osprey, who by loud screechings had prevented her mate from alighting beside her on a boulder-nest while the umbrella tent was in dangerously close proximity.

At the end of a couple of hours, in hopes of obtaining a still more intimate view of the faithful sitter, I ventured to advance the tent to within fifteen feet of the nest. But, after another hour had elapsed, I had come to the conclusion that the move was unfortunate, for the bird now seemed to balk entirely at the green object looming so uncomfortably near; moreover, it led eventually, though perhaps indirectly, to the enactment before me of an avian tragedy of a positively startling nature.

At 5:40 P.M. a Laughing Gull lit on the edge of the nest, and, scarcely pausing for an instant's survey of the surroundings, plunged its bill into the nest with a vicious stroke, accompanied by the audible crash of a breaking eggshell! The act was so sudden and astonishing, if not entirely unheard of, as to defy explanation for a time, at least. Could this possibly be the owner, who, feeling compelled to desert her home, was therefore devastating it in a spirit of blind rage? Could it be her mate, so totally devoid of parental instinct as to destroy his own unhatched offspring? Or was it some other member of the colony, a robber or degenerate, taking advantage of the owner's absence to feast with a cannibal's gluttony upon the eggs of its own species?

Before these questions could be answered, the Gull took sudden alarm and



THE ROBBER HOVERING OVER THE NEST

flew off, only to come again and continue its dastardly work. I was now struck with a certain difference in general appearance between the incubating female and this bird. In the latter I also noticed particularly a V-shaped tuft of white feathers that extended far below the nape and overlapped the bend of the wing—a peculiarity which shows clearly, as I had hoped, in some of the photographs. As further evidence that this was not the owner, I saw presently that mere destruction was not its aim; it was devouring the eggs with the plainest relish,



THE ROBBER EATING THE EGGS

even lifting the eggs entirely out of the nest in its eagerness to gulp down the oozing contents. And with what a wild, sneaking, diabolical look the handsome robber glanced from side to side, as if momentarily apprehensive of the owner's return! Once more he departed in alarm or fear, this time alighting on the pool to wash off his reeking bill. With appetite still unsatiated, however, he flew boldly back, and continued his disgusting meal within fifteen feet of the tent, from which I watched his every movement. When he left finally, two of the three eggs had been destroyed.

With such a pirate in their midst (and who knows how many more there were

in the colony?) it seemed that each pair of Laughing Gulls must maintain the strictest guard over their nest and incubate by turns, or pay the penalty in the distressing way that I had witnessed,—and for which I could not but feel largely responsible.

Several of the best local observers of that part of the Virginia coast, whom I questioned, had never noticed the rifling of a Laughing Gull's nest by the same species, and were unable to shed any light upon the subject. Furthermore, ornithological literature contains no reference*, so far as I am aware, to this remarkable penchant, or habit, of the Laughing Gull. Certain other

*Since the above was written, Mr. Alfred B. Howell has mentioned in 'The Auk' (Vol. XXVIII, 1911, p. 453) a Laughing Gull's attempt at Cobb's Island to steal eggs, but does not name the species whose nest was in danger of being robbed.

members of the genus, especially the Western Gull of our Pacific Coast and the Lesser Black-backed Gull of Europe, are notorious nest-robbers, but as each of these is believed to invariably respect the eggs of its own species, the act of the Cobb's Island bird appears by comparison the more strange and incomprehensible.

This avian tragedy reached its climax half an hour after the robber's departure. At 6:20 P. M. a bird, apparently the returning owner, came winging across the pool from the direction of the beach, and circled high above the nest; then for the first time catching sight of the ruin, she broke forth into loud and prolonged cries of almost unmistakable anguish.



A GREAT BLUE HERON WHICH CAME ABOARD THE S. S. 'ALMIRANTE'
ABOUT 300 MILES OFF THE COAST OF SOUTH CAROLINA

Photographed by Edward Harold Pound, November, 1910

One of Our Neighbors

By LILLIAN LAMBERT, Cedar Falls, Iowa

THE theory of evolution—that each form of life has developed through hundreds and thousands of years from a lower form—puts our ideas in regard to life upon a different basis, and establishes more than ever before a kinship among all forms of animals. We, as human beings, have dominion over the lower forms of animals simply because of the superiority of our intellect, but this superiority, instead of making us arrogant, should give us a broader sympathy for our feathered and four-footed brothers, and a keener insight into their world, which is by no means a small one.

Birds, as a class, are far more intelligent than the average person thinks, and this is especially true of the Crow. Most of us have inherited from our ancestors the epithet “thieving Crow,” and a prejudice against him which he little deserves. To say that a Crow steals, gives to him the moral insight into right and wrong which the genus *Homo* alone possesses. The Crow does, without doubt, annoy the farmer by taking his sprouting corn, and by destroying other things of value; but a certain scientist, after examining the stomachs of hundreds of Crows, stated that the injurious insects which they destroyed more than compensated for the annoyance they caused the farmer by their so-called theft and mischief.

But what is man, I wonder, judged from the Crow's standpoint—that giant monster with a deadly weapon that kills, which he uses with malicious intent without any provocation whatever? And so, to outwit him, the Crows, before descending on a cornfield, place a sentinel on the top of the tallest tree. He sounds a note of warning at any supposed danger, and the entire flock beat a hasty retreat. But, granting that all the accusations brought against him are true, let us be fair enough to our dusky neighbor to glance a moment at the other side of his character.

Crows, when young, are easily tamed, and in this state of domestication make pets as affectionate and loyal as the dog. I have in mind a certain tame crow named Bill. He was very fond of his friends, but was averse to all other human beings, especially barefoot boys. Whenever any of these little intruders came into the yard, he would fly at once at their feet, having decided on the most vulnerable point at a glance. The boys generally fled in dismay, frightened, but unhurt. His affection for the family, however, knew no bounds. His most cordial greeting was given to the earliest riser, and the members of the family vied with each other in getting up early in order to be the recipients of Bill's special favor. He would ruffle his feathers, roll his eyes, flap his wings gently, and then finally say, “Hello! hello!” in the exact tone of voice that had been used when he was taught the word. He knew one member of the family after he had been separated from her for eight months, and went through this same demonstrative greeting on seeing her. He was very fond

of human companionship, always sitting on the arm of our chair, or on the bough of the tree under which we sat. Once we heard a voice above us say, "Oh! oh!" and, on looking up, we saw Bill flapping his wings for welcome; then he said, "Hello! hello!" The Crows, too, are fond of the companionship of each other, the nests of the entire flock always being in one locality. They believe in the communistic form of living.

Bill had his entire freedom and, though he stayed at home most of the time, he occasionally visited the wild Crows. One day he was present when the peas were picked for dinner, and was much interested in the process, especially in the fact that three or four sweet, tender peas were within each pod. The next day he flew away to the wild Crows. Suddenly a great cawing was heard, caws loud and excited. We looked out to see a flock of Bill's black brothers in the yard. That ended our peas for that summer, for in a few moments not one was to be found. The Crows dined that morning on spring peas. His favorite food, however, was cheese. He always soaked it before eating it, and so, of the large portion we gave him, there was finally nothing left but a clean piece of cheesecloth.

He was also much interested in the washing, especially in the placing of the clothespins. A tablecloth was once put upon the grass to bleach. Bill cawed excitedly when he saw it, then he flew away and returned immediately with a clothespin which he placed on one of the corners of the tablecloth. On another occasion, the maid was hanging the clothes on the line, but was obliged to stop, not being able to find the pins. Bill assisted in the search and soon returned with one in his mouth. He had found the basket of pins some distance back in the garden under a tree.

The Crow is noted for its fondness for bright colors, and in this respect Bill was no exception. His admiration for beautiful jewelry was equal to that of any society belle. He would often light on the arm of the chair, when one was sewing, and beg for the thimble, picking at it and making a peculiar little sound something like the half-crying tone of a child. The thimble was generally given to him, and he would fly away to hide it under the leaves. He was very indignant if we picked it up again, and we generally waited till he was gone to deprive him of his hidden treasures—pins, buttons, tacks, or anything that was bright enough to attract his admiration.

We never returned home, after a little visit in the neighborhood, without being welcomed by Bill's happy "*Caw! caw!*" And now, whenever I hear a caw and see one or more of these dusky birds flying through the air, I remember not that these feathered friends of ours take our corn and cherries, but that no animal excels them in intelligence and affection.

Some Nesting Habits of the Oregon Junco

By MAY R. THAYER, Everett, Wash.

THE Oregon Juncos are permanent residents of the Puget Sound region, and have habitually nested about our home. It was not until the summer of 1908, however, that I had an opportunity of observing them closely during a part of the nesting-season. In the spring of the same year, I had tried to discover the nesting-place of the pair that frequented our lunch-counter, but with no success. For their second nest, they very accommodatingly selected a site within a stone's-throw of our door. Our first intimation that they were building in our immediate vicinity came to us on June 8, when I noticed the female picking up hairs that Donald, the collie, had scattered on the walk. This told the tale of a nearly completed nest, and to discover its whereabouts I kept my eye on the bird. She alighted on a low branch of a cedar tree in a wide, sunny ravine, the slope of which began about a dozen feet from the house. From the tree she dropped to the ground, out of sight below the brow of the hill. I watched until she reappeared without her burden; then I knew that a longed-for opportunity was at hand; that her nest was on the slope between the tree and the house, and that it was only a matter of time when I should find it.

For two or three days, they busied themselves with the completion of the nest. The actual construction of the nest seemed to fall to the share of the female, while the male watched over her, encouraging her by his presence and his music. They always came together for the dog hairs. Often he would perch on a tall stump beside the walk, and watch her while she worked, singing with the greatest energy. At other times, he would alight, still singing, on the walk beside her, and would follow her about, with his tail spread wide to show its white feathers. When she went to the nest, he always escorted her to the cedar tree, where he waited for her. After each visit to the nest, the two invariably took a little excursion through the evergreens in the ravine, she in the lead from tree to tree, and he after her, stopping frequently to sing a few strains. It seemed as if she purposely delayed her work to tease him, and his joy, when she returned to her labors, was pretty to see. He would hover over her with tail spread fan-like, and sing as if he would burst his little throat. This love song is a succession of high notes in a monotonous trill or rattle, not unlike the song of the Chipping Sparrow, but much fuller and sweeter, and the strain is shorter. It is very different from the low warble of the early mating season.

The female has a dainty way of collecting the hairs, taking each one by the middle, until she has a little brush protruding from each side of her bill. Only once I saw the male make an attempt to help her. He picked up a piece of dry grass, flew with it to the telephone wire, held it for a few seconds, then dropped it, and went to singing as if glad to show there was one thing in which he could excel.

Once during the period of nest-building, I saw the whole family—father, mother and two youngsters of the first brood—at the lunch-counter. Here the father showed his devotion to his family by taking all the care of the children. They followed him about, and he patiently dropped grain, first into one gaping mouth and then into the other. While the mother ate her meal unconcernedly, and then flew off in the direction of her new nest. Soon there came a time when the female was seen only when she made hurried visits to the lunch-counter for food and water. The male spent much of his time singing in the cedar-tree, or on a nearby telephone pole. He and the two young ones were often seen at the lunch-counter, and in the trees near the nest. A dense yew



OREGON JUNCO

tree, about fifteen feet distant, was a favorite with them, and here they were so often seen at dusk as to warrant the conclusion that they roosted there.

On July 6, we first saw the parents with food in their bills, and knew that the second brood was hatched. I took a position under a small cherry tree on the slope, and waited. The female soon arrived with food and alighted in the yew tree. She 'ticked' several times, then flew down and disappeared in the weeds about twenty feet below me on the slope. She reappeared almost instantly, perched in the yew tree again, wiped her bill daintily, and lingered a short time before departing. In five minutes she returned, accompanied by the male, both with food for the young. She flew down at once, reappeared without the food, and departed. The male was disturbed by my presence. It was fifteen minutes before he was reassured sufficiently to visit the nest, and leave the two fat worms that dangled from his bill. Even with the location thus plainly marked, I had difficulty in finding the nest, so completely was it

concealed. The hillside was covered by a matted growth of tall grass, brakes, red clover, everlasting, and other weeds, and much caution had to be exercised to avoid the danger of stepping on the nest. Parting a clump of fireweed, I at last discovered a tunnel-like opening under a bunch of low Christmas ferns. A few inches back from the mouth of the opening was the nest. Its roof of dried fern fronds and grass, with its location on a north slope, protected it from the sun, as well as from rain. I looked in vain for yawning bills, or other sign of life. In the dim light, the nest seemed empty; but my fingers came in contact with a soft, downy mass, the only motion of which was a slight rise and fall from the breathing. Not wishing to be seen by the parents at the nest, I did not investigate further.

The parents seemed to share equally the responsibility of providing for the young, though the mother was somewhat the more zealous. She visited the nest without hesitation as long as I remained on the up-hill side of the nest, near the house, where she was accustomed to seeing people pass, but would not approach the nest if I appeared anywhere near it on the lower side. The male was much more suspicious. He was always uneasy if any one appeared in the neighborhood of the nest, and would approach it only after much delay, and by a circuitous route among the weeds. Often, on finding a spectator, he would, after waiting and scolding for some time, himself devour the food he had brought, instead of taking it to the nest. Twice, on their arrival, the old birds found me at the nest, and their behavior on these occasions was remarkable. Instead of showing the frenzy of fear or anger that might have been expected, they seemed quite unconcerned, and watched calmly from the vines in an indifferent way, as if to say: "Do not hurry yourself on our account. We can wait as long as you please." Was it the courage born of despair, or a ruse to make me think that I was 'cold'?

Two other Juncos, that came to the yew tree, were promptly driven away by nesting pairs, both of whom happened to be at home, though no attention was paid to the other birds of other species that frequented the tree. The necessity of providing food for the young developed unsuspected fly-catching powers in the Juncos. It was very amusing to watch the process. They were not expert enough to 'strike' their prey, but clumsily *chased* it instead and, often missing it, had to turn and try again. Sometimes the moth would drop on being attacked, and the bird would drop after it, wheeling and jabbing and turning somersaults in vain attempts to capture it. The male, on spying a large winged ant below him, dropped for it, caught it and gave it a jerk to the ground; caught it again, and repeated the performance several times. When he finally carried his prey to the nest, the wings were left behind.

I allowed myself but one brief visit to the nest each day, and, with one exception, always found the tree nestlings as motionless as graven images. They lay close in the nest, facing the opening, with bills tightly closed. On the fifth day, two of them had their eyes open for the first time. On the seventh

day, the feathering was well along, and a tiny little tail, about three-quarters of an inch long, stuck up against the back of the nest. As they caught sight of me, they gave a little start, settled more closely into the nest, and 'froze' as usual. This was the only motion I ever saw them make. On the eighth day, a heavy rain fell; but the nest and its occupants remained perfectly dry; so well had the site been chosen. On the morning of the ninth day, when all nature was drenched and shivering, I found an empty nest. But, as the old birds were seen to drop with food into the tangled grass of the hillside, I knew that the young birds were safe so far. It seemed a pity, however, that they should have to begin their struggle for existence in such inclement weather. Later in the day, the parents were carrying grain to a brush-pile more than 200 feet from the nest, so one at least of the babies reached shelter in safety. This was the first time they were seen to feed anything but animal food. For two or three days the old birds carried grain from the lunch-counter, and then were seen no more.



Red-headed Woodpecker at Camden, N. J.

By JULIAN K. POTTER



RED-HEADED WOODPECKER
Photographed March, 1912, by G. A.
Bailey, at Geneseo, N. Y.

PREVIOUS to 1910, I had seen the Red-headed Woodpecker in this locality as a migrant only; but in June of that year a pair nested, and successfully raised a brood in a patch of woods directly on the Delaware River. In November, 1910, I located another pair which were wintering in a grove about two miles back from the river, within the city limits, and for the past nine months have seldom failed to see these birds when passing through the locality they frequented.

As early as February 26, 1911, I saw one of the Woodpeckers fighting with two Starlings over the possession of a hole in a dead maple tree, which the Woodpecker, I think, used as a roosting-place. Whether this site would have

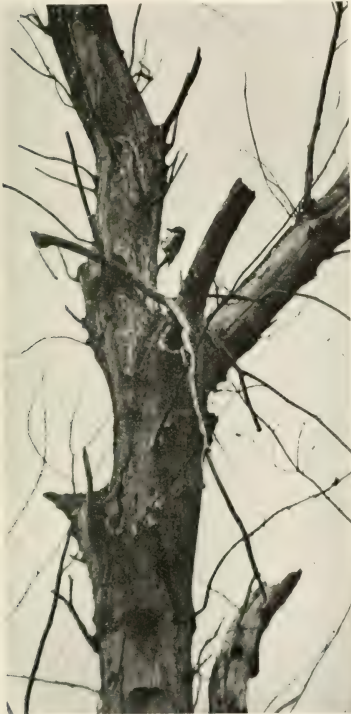
been used for a nesting-place or not, I cannot say, for, unfortunately, the tree was cut down a short time after. This was the only time I observed the Starlings interfering with the Redheads, although there were a number of pairs in the vicinity, and four pairs had nests within twenty-five yards of the Woodpeckers' nest, which I first located on May 21, in the dead top of a maple tree, about thirty feet from the ground. On this date the old birds were feeding their young, and from this time on I kept as close watch of the birds as circumstances would permit, and made a number of interesting notes. The young birds left the nest about June 25. On that day I saw them out in the open, quite able to take care of themselves, although the parents fed them occasionally. I thought this would be the only brood raised, since the pair I observed in 1910 raised but a single brood; so I was quite surprised, when passing the old nesting-tree on July 23, to see a parent bird enter the hole with something in its bill. I came to the conclusion that another brood was being raised, and found that I had surmised correctly when, on July 30, I heard the unmistakable squeaking of the young birds. Meanwhile the young of the first brood were being very much misused by their parents, and were driven away whenever they came in sight; in fact they were persecuted to such an extent that they must have been driven from the locality, for I was unable to find them after July 30. By August 6, the young of the second brood were able to climb to the entrance of their home and survey the outside world. It was at this time I discovered that one of the young had a triangular blotch of red back of each eye, otherwise the coloration was the same as usual. On August 16, when I visited the nest, I saw the long, sleek head of a Starling extending from the

hole, and decided that the young Woodpeckers had left. On investigation, I found two of them in company with one of the parents, a short distance from the nesting-tree.

The old birds fed the young at varying intervals, sometimes going to the nest once in every three or four minutes for a half hour, then not appearing again for fifteen or twenty minutes. Quite in contrast, was the methodical feeding of their neighbors, the Starlings, who averaged once in four or five minutes any time of the day I happened to be in the neighborhood.

On one occasion, when I watched the Woodpeckers until dark, I found that one went to roost in the nesting-hole about dusk, and the other, probably the male, shortly after went into an old hole in the same dead tree, higher up.

The Sparrows bothered the Woodpeckers somewhat. At times, when a sparrow became too inquisitive, the Woodpecker would dive at him and bear him clear down to the ground; there the matter would end, the Sparrow rapidly flying away, and the Woodpecker flying back to the nest, where possibly another foreigner would be on deck, to be dealt with in the same way. By the time the second brood was well under way, the Sparrows, as well as all other birds in the vicinity, seemed to have learned



RED-HEADED WOODPECKER
Photographed by the author

the lesson of "no trespass" and the Red-heads had everything their own way.

To my regret, I was unable to determine the number of young in each brood, on account of the character of the tree in which the nest was located. However, I am pretty certain that the second brood consisted of two birds only, as this was all I ever saw at one time.

The Migration of North American Sparrows

SEVENTEENTH PAPER

Compiled by Professor W. W. Cooke, Chiefly from Data in the Biological Survey

With Drawings by LOUIS AGASSIZ FUERTES

(See frontispiece)

CAÑON TOWHEE

This non-migratory species has its center of abundance in Arizona and New Mexico, from which a few range north as far as Boulder, Colorado, east into western Texas, and south for a short distance into Mexico.

CALIFORNIA TOWHEE

This is one of the most abundant and characteristic birds of California. It is a permanent resident from the foothills of the Sierra Nevada to the coast; a few ranging north to southwestern Oregon. The form occurring in southwestern California and northern Lower California has been separated as a subspecies, *Pipilo crissalis senicula*, Anthony's Towhee.

ABERT'S TOWHEE

Abert's Towhee is an abundant permanent resident of southern Arizona and of the deserts of southeastern California and northeastern Lower California. A few range north in the Colorado Valley to southeastern Nevada and southwestern Utah, and the species is also found in southwestern New Mexico.

Notes on the Plumage of North American Sparrows

SIXTEENTH PAPER

By FRANK M. CHAPMAN

(See frontispiece)

Cañon Towhee (*Pipilo fuscus mesoleucus*, Figs. 1 and 2).—The Cañon Towhee is a near relative of the California Towhee, from which it differs in being somewhat smaller, and generally paler, the throat and under tail-coverts being buff rather than cinnamon, the belly being whiter, while most specimens have a blackish blotch on the lower breast not present in the California Towhee. Both species appear to agree in regard to their molts, and their seasonal changes in plumage are almost equally limited, though summer specimens of the Cañon Towhee have the reddish brown crown-cap more pronounced and better defined.

As with the other brown Towhees, the male and female of this species are alike in color, the young differs from them but slightly and there are no

marked seasonal variations in plumage. The juvenal plumage is essentially like that of the adult but the brown cap is not evident, the buffy throat not so pronounced, and the underparts are streaked with dusky. The post-juvenal molt appears to resemble that of the other brown Towhees, that is, the body plumage, tail, inner wing-quills, and all but the primary wing-coverts, are replaced by the feathers of the first winter plumage, which resembles the winter plumage of the adult.

There is apparently no spring molt, and the differences between summer and winter plumage are due to wear and fading, which do not materially alter the color of the plumage.

The San Lucas Towhee (*Pipilo fuscus albigula*) is a smaller, darker race with a white throat, which inhabits the Cape Region of Lower California north to latitude 29°.

California Towhee (*Pipilo crissalis crissalis*, Fig. 3).—This species differs from the Cañon Towhee in its deeper, richer coloration, which is particularly pronounced on the throat and under tail-coverts. The sexes are alike, and the young bird in juvenal plumage resembles in general coloration the adult, but lacks the brown cap, the throat is not so deeply colored, and the underparts are streaked with dusky. There are practically no seasonal changes in color, and the plumage-changes appear to resemble those of the Cañon Towhee.

Anthony's Towhee (*Pipilo crissalis senicula*), a smaller form, with darker upperparts and less ochraceous on the underparts, ranges, according to the A. O. U. 'Check-List,' from "Southern California south of the San Bernardino Mountains, and on the Pacific side of Lower California south at least to latitude 29°."

Abert's Towhee (*Pipilo aberti*, Fig. 4).—In this species the sexes are alike, and there are but slight variations in plumage due to age or season. The juvenal plumage, while showing the usual difference in texture from that of subsequent plumages, is of the same general tone as that worn by the adult, but the underparts are paler and are faintly streaked with dusky.

The postjuvenal molt appears to include all the body feathers, the tail and the inner wing-feathers, and in the resulting first-winter plumage the bird resembles the adult, with pink-tinged breast and blackish about the face. There appears to be no spring molt, and breeding specimens wear a very ragged plumage, which, aside from being slightly paler, does not differ in color from that of winter.

The Massachusetts Audubon Society's Bird-Lists

THE success attending the Massachusetts Audubon Society's plan of inducing its members to record the birds observed by them in Massachusetts, during the year, on blanks supplied for this purpose, continues to be attested by the number and character of the lists sent in. The ten best lists received by the Secretary of the Society for the year ending December 31, 1911, were made by the following members: Joseph A. Hagar, Newtonville, 210 species; H. D. Mitchell, Newtonville, 208 species; W. Charlesworth Levey, Brookline, 189 species; F. A. Scott, 158 species; Mrs. Mary Moore Kaan, Brookline, 74 species; Horace McFarlin, Bridgewater, 73 species; Helen W. Kaan, Brookline, 70 species; Marie Warton Kaan, Brookline, 58 species; Mary F. Atkinson, Brookline, 44 species; Edwin H. Merrill, Winchendon, 16 species. The two lists first mentioned are published herewith.

List of Birds observed by Joseph A. Hagar, in Mass., from January 1, 1911, to December 31, 1911.			List of Birds observed by H. D. Mitchell, in Mass., from January 1, 1911, to Decem- ber 31, 1911.		
Name of Species	Locality	Date	Locality	Date	
Holboell's Grebe.....	Marshfield.....	Apr. 8	Nahant.....	Jan. 28	
Horned Grebe.....	Marshfield.....	Oct. 28	Marshfield.....	Dec. 2	
Pied-billed Grebe.....	Canton.....	Sept. 16	Canton.....	Sept. 13	
Loon.....	Marshfield.....	Feb. 24	Nahant.....	Jan. 28	
Red-throated Loon.....	Marshfield.....	Apr. 4	Marshfield.....	Apr. 4	
Black Guillemot.....	.....	.....	Nahant.....	Dec. 27	
Pomarine Jaeger.....	Marshfield.....	Aug. 30	Provincetown.....	Aug. 15	
Parasitic Jaeger.....	.....	.....	Plum Island.....	Sept. 23	
Great Black-backed Gull.....	Chestnut Hill.....	Mar. 19	Cambridge.....	Jan. 25	
Herring Gull.....	Marshfield.....	Feb. 24	Cambridge.....	Jan. 25	
Ring-billed Gull.....	.....	.....	Plum Island.....	Sept. 23	
Laughing Gull.....	Marshfield.....	July 29	Marshfield.....	July 29	
Bonaparte's Gull.....	Ipswich.....	Aug. 20	Marshfield.....	July 29	
Common Tern.....	New Bedford.....	June 30	Marshfield.....	July 29	
Arctic Tern.....	Woods Hole.....	June 30	Marshfield.....	July 29	
Roseate Tern.....	Woods Hole.....	June 30	Nahant.....	Aug. 6	
Least Tern.....	Nantucket.....	July 1	Provincetown.....	Aug. 15	
Wilson's Petrel.....	.....	.....	Cohasset.....	Aug. 15	
Gannet.....	Plum Island.....	Sept. 30	.....	.....	
Double-crested Cormorant.....	Marshfield.....	Sept. 10	Salem.....	Sept. 21	
American Merganser.....	Cambridge.....	Mar. 25	Cambridge.....	Jan. 25	
Red-breasted Merganser.....	Marshfield.....	Apr. 4	Marshfield.....	Apr. 4	
Hooded Merganser.....	Middlesex Fells.....	Nov. 4	Middlesex Fells.....	Oct. 31	
Mallard.....	Chestnut Hill.....	Mar. 19	Cambridge.....	Jan. 25	
Black Duck.....	Marshfield.....	Feb. 24	Marshfield.....	Apr. 4	
Red-legged Black Duck.....	Brookline.....	Mar. 19	Cambridge.....	Jan. 25	
Green-winged Teal.....	Ipswich.....	Sept. 30	.....	.....	
Blue-winged Teal.....	Ipswich.....	Aug. 20	Ipswich.....	Aug. 20	
Pintail.....	Marshfield.....	Oct. 28	Plum Island.....	Sept. 23	
Wood Duck.....	Canton.....	Sept. 16	Canton.....	Sept. 13	
Redhead.....	Cambridge.....	Nov. 24	Cambridge.....	Nov. 22	
Scaup Duck.....	Duxbury.....	Dec. 2	Nahant.....	Jan. 28	
Lesser Scaup Duck.....	Jamaica Pond.....	Nov. 4	Jamaica Plain.....	Nov. 3	

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ber 31, 1911.

Name of Species	Locality	Date	Locality	Date
American Golden-eye.....	Marshfield.....	Feb. 24	Cambridge...	Jan. 25
Bufflehead.....	Marshfield.....	Feb. 24	Nahant.....	Jan. 28
Old-squaw.....	Marshfield.....	Mar. 11	Nahant.....	Jan. 28
American Scoter.....	Marshfield.....	Feb. 24	Plum Island.....	Oct. 12
White-winged Scoter.....	Marshfield.....	Feb. 24	Nahant.....	Jan. 28
Surf Scoter.....	Ipswich.....	Sept. 30	Plum Island.....	Sept. 23
Ruddy Duck.....	Marshfield.....	Oct. 28	Cambridge.....	Nov. 22
Canada Goose.....	Marshfield.....	Apr. 6	Duxbury.....	Dec. 2
Brant.....	Duxbury.....	Dec. 2	Duxbury.....	Dec. 2
American Bittern.....	Marshfield.....	May 17	Scituate.....	Aug. 29
Great Blue Heron.....	Marshfield.....	Apr. 18	Stoneham.....	Apr. 22
Green Heron.....	Newton.....	May 12	Cambridge.....	May 4
Black-crowned Night Heron..	Brookline.....	Mar. 10	Brookline.....	Feb. 11
Virginia Rail.....	Cambridge.....	June 10	Cambridge.....	May 4
Sora.....	Cambridge.....	May 2	Cambridge.....	June 10
American Coot.....	Jamaica Pond..	Apr. 16	Jamaica Pond...	Apr. 10
American Woodcock.....	Newton.....	Feb. 26		
Wilson's Snipe.....	Cambridge.....	May 2		
Dowitcher.....	Ipswich.....	Aug. 20	Ipswich.....	Aug. 22
Knot.....	Marshfield.....	Aug. 7	Nahant.....	Sept. 3
Pectoral Sandpiper.....	Marshfield.....	July 30	Marshfield.....	July 30
White-rumped Sandpiper.....	Marshfield.....	May 21	Marshfield.....	July 29
Least Sandpiper.....	Marshfield.....	May 17	Marshfield.....	July 29
Red-backed Sandpiper.....	Marshfield.....	May 21	Marshfield.....	Aug. 29
Semipalmated Sandpiper.....	Marshfield.....	May 21	Marshfield.....	July 29
Sanderling.....	Marshfield.....	May 21	Marshfield.....	July 29
Greater Yellow-legs.....	Marshfield.....	Apr. 4	Marshfield.....	Apr. 4
Yellow-legs.....	Marshfield.....	July 18		
Solitary Sandpiper.....	Marshfield.....	May 16	Cambridge.....	July 23
Bartramian Sandpiper.....	Ipswich.....	Aug. 20	Ipswich.....	Aug. 20
Spotted Sandpiper.....	Cambridge.....	May 2	Newton.....	May 6
Hudsonian Curlew.....	Marshfield.....	July 24	Nahant.....	Sept. 3
Black-bellied Plover.....	Marshfield.....	May 21	Ipswich.....	Sept. 23
Am. Golden Plover.....	Marshfield.....	Aug. 29	Marshfield.....	Aug. 29
Semipalmated Plover.....	Marshfield.....	May 21	Marshfield.....	July 29
Piping Plover.....	Marshfield.....	July 24	Nahant.....	Aug. 18
Ruddy Turnstone.....	Marshfield.....	May 21	Nahant.....	Aug. 6
Bob-white.....	Arboretum.....	May 7	Jamaica Plain..	Feb. 11
Ruffed Grouse.....	Marshfield.....	July 21	W. Boylston....	July 2
Mourning Dove.....	Sudbury.....	May 30	Sudbury.....	May 30
Marsh Hawk.....	Marshfield.....	Apr. 18	Ipswich.....	Aug. 20
Sharp-shinned Hawk.....	Newton.....	Apr. 13	Waltham.....	Mar. 19
Cooper's Hawk.....	Marshfield.....	Apr. 18	Holden.....	June 3
Red-tailed Hawk.....	Ipswich.....	Aug. 20	Ipswich.....	Aug. 20
Red-shouldered Hawk.....	Marshfield.....	Apr. 4	Newton.....	Mar. 11
Broad-winged Hawk.....	Marshfield.....	Aug. 28		
Am. Rough-legged Hawk.....			Middlesex Fells	Dec. 28
Bald Eagle.....	Martha's Vineyard...	June 30		
Sparrow Hawk.....	Chestnut Hill..	Mar. 19	Brookline.....	Feb. 11
Osprey.....	Marshfield.....	May 21	Ipswich.....	Aug. 20
Short-eared Owl.....	Ipswich.....	Oct. 12	Plum Island.....	Oct. 12
Barred Owl.....	Boston.....	Dec. 28	Boston.....	Dec. 26
Screech Owl.....	Marshfield.....	Aug. 4	Newton.....	Sept. 11
Yellow-billed Cuckoo.....	Newton.....	May 13	Newton.....	May 13

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Name of Species	Locality	Date	Locality	Date
Black-billed Cuckoo.....	Newton.....	May 27	Newton.....	May 18
Belted Kingfisher.....	Marshfield.....	Apr. 10	Newton.....	Apr. 12
Hairy Woodpecker.....	Marshfield.....	Apr. 30	Newton.....	Jan. 23
Downy Woodpecker.....	Newton.....	Jan. 5	Newton.....	Jan. 23
Yellow-bellied Sapsucker.....	Middlesex Fells	Apr. 22	Middlesex Fells.	Apr. 22
Red-headed Woodpecker.....	Newton.....	Jan. 2	Newton.....	Sept. 11
Northern Flicker.....	Newton.....	Jan. 2	Arlington.....	Jan. 25
Whip-poor-will.....	Marshfield.....	Apr. 29	W. Boylston....	July 2
Nighthawk.....	Newton.....	May 16	Newton.....	May 16
Chimney Swift.....	Newton.....	May 7	Cambridge.....	May 4
Ruby-throated Hum'gbird.....	Sudbury.....	May 30	Newton.....	May 14
Kingbird.....	Newton.....	May 12	Newton.....	May 7
Crested Flycatcher.....	Marshfield.....	May 16	Newton.....	May 23
Phoebe.....	Marshfield.....	Apr. 1	Newton.....	Mar. 26
Wood Pewee.....	Newton.....	May 16	Newton.....	May 16
Alder Flycatcher.....	Sudbury.....	May 30	Sudbury.....	May 30
Least Flycatcher.....	Newton.....	May 11	Newton.....	May 11
Horned Lark.....	Marshfield.....	Feb. 24	Nahant.....	Jan. 28
Prairie Horned Lark.....	Ipswich.....	Aug. 20	Ipswich.....	Sept. 23
Blue Jay.....	Newton.....	Jan. 1	Weston.....	Jan. 7
American Crow.....	Newton.....	Jan. 1	Weston.....	Jan. 7
Bobolink.....	Newton.....	May 6	Newton.....	May 6
Cowbird.....	Newton.....	Mar. 26	Newton.....	Mar. 26
Red-winged Blackbird.....	Cambridge.....	Mar. 25	Newton.....	Mar. 25
Meadowlark.....	Cambridge.....	Mar. 25	Cambridge.....	Feb. 10
Baltimore Oriole.....	Newton.....	May 8	Newton.....	May 11
Rusty Blackbird.....	Cambridge.....	Apr. 22	Cambridge.....	Apr. 14
Bronzed Grackle.....	Brookline.....	Mar. 19	Newton.....	Mar. 19
Purple Finch.....	Marshfield.....	Apr. 1	Jamaica Plain..	Feb. 11
American Crossbill.....	Newton.....	May 5	Newton.....	May 13
Redpoll.....	Newton.....	Feb. 7	Newton.....	Jan. 8
American Goldfinch.....	Newton.....	Feb. 11	Weston.....	Jan. 7
Pine Siskin.....	Marshfield.....	Dec. 3	Nahant.....	Nov. 12
Snowflake.....	Marshfield.....	Feb. 24	Duxbury.....	Dec. 2
Vesper Sparrow.....	Marshfield.....	Apr. 9	Belmont.....	Apr. 8
Ipswich Sparrow.....	Marshfield.....	Oct. 28	Duxbury.....	Dec. 2
Savannah Sparrow.....	Marshfield.....	Apr. 18	Middlesex Fells.	Apr. 22
Grasshopper Sparrow.....	Wayland.....	May 30	Wayland.....	May 30
Henslow's Sparrow.....	Norwood.....	May 29	Norwood.....	June 9
Sharp-tailed Sparrow.....	Marshfield.....	July 18	Marshfield.....	July 29
White-crowned Sparrow.....	Marshfield.....	May 17	Newton.....	Oct. 6
White-throated Sparrow.....	Newton.....	Apr. 28	Brookline.....	Feb. 25
Tree Sparrow.....	Marshfield.....	Feb. 24	Jamaica Plain..	Feb. 11
Chipping Sparrow.....	Marshfield.....	Apr. 18	Newton.....	Apr. 16
Field Sparrow.....	Marshfield.....	Apr. 7	Newton.....	Apr. 12
Slate-colored Junco.....	Newton.....	Jan. 2	Waltham.....	Jan. 23
Song Sparrow.....	Newton.....	Jan. 4	Cambridge.....	Jan. 25
Lincoln's Sparrow.....	Newton.....	Sept. 14		
Swamp Sparrow.....	Cambridge.....	Apr. 22	Cambridge.....	Apr. 14
Fox Sparrow.....	Cambridge.....	Mar. 25	Brookline.....	Mar. 24
Towhee.....	Newton.....	Apr. 28	Newton.....	Apr. 30
Rose-breasted Grosbeak.....	Newton.....	May. 10	Newton.....	May 9
Indigo Bunting.....	Newton.....	May 14	Newton.....	May 14
Scarlet Tanager.....	Newton.....	May 11	Newton.....	May 11
Purple Martin.....	Marshfield.....	Aug. 28		

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Cliff Swallow.....	Sudbury.....	May 30	Cambridge.....	May 4
Barn Swallow.....	Middlesex Fells	Apr. 22	Middlesex Fells.	Apr. 22
Tree Swallow.....	Marshfield.....	Apr. 4	Marshfield.....	Apr. 4
Bank Swallow.....	Marshfield.....	Apr. 30	Beverly.....	June 2
Cedar Waxwing.....	Chestnut Hill...	Apr. 16	Newton.....	Mar. 11
Northern Shrike.....	Cambridge.....	Mar. 25	Belmont.....	Feb. 22
Red-eyed Vireo.....	Marshfield.....	May 16	Newton.....	May 11
Warbling Vireo.....	Newton.....	May 13	Newton.....	May 11
Yellow-throated Vireo.....	Newton.....	May 8	Newton.....	May 7
Blue-headed Vireo.....	Marshfield.....	Apr. 30	Newton.....	Apr. 25
White-eyed Vireo.....	Newton.....	Sept. 12	Public Garden...	May 22
Black and White Warbler...	Newton.....	Apr. 28	Newton.....	Apr. 30
Golden-winged Warbler...	Newton.....	May 6	Newton.....	May 6
Nashville Warbler.....	Newton.....	May 11	Newton.....	May 11
Tennessee Warbler.....	Newton.....	May 19	Public Garden...	May 18
Northern Parula Warbler...	Newton.....	May 14	Newton.....	May 14
Yellow Warbler.....	Newton.....	May 6	Newton.....	May 2
Black-throated Blue Warbler	Newton.....	May 14	Newton.....	May 14
Myrtle Warbler.....	Marshfield.....	Feb. 24	Marshfield.....	Apr. 4
Magnolia Warbler.....	Newton.....	May 11	Newton.....	May 14
Chestnut-sided Warbler.....	Newton.....	May 6	Newton.....	May 6
Bay-breasted Warbler.....	Marshfield.....	Sept. 23	Newton.....	Sept. 12
Black-poll Warbler.....	Newton.....	May 6	Newton.....	May 6
Blackburnian Warbler.....	Mt. Graylock...	June 25	Newton.....	May 18
Black-thr't'd Gr'n Warbler...	Arboretum.....	May 7	Newton.....	May 11
Pine Warbler.....	Marshfield.....	Apr. 4	Marshfield.....	Apr. 4
Palm Warbler.....	Marshfield.....	Oct. 27	Arboretum.....	Dec. 24
Yellow Palm Warbler.....	Marshfield.....	Apr. 19	Arboretum.....	Apr. 20
Prairie Warbler.....	Newton.....	May 11	Newton.....	May 11
Ovenbird.....	Newton.....	May 6	Newton.....	May 6
Water-Thrush.....	Newton.....	May 12	Newton.....	May 13
Connecticut Warbler.....	Marshfield.....	Sept. 7	W. Roxbury...	Sept. 4
Mourning Warbler.....	Newton.....	May 27	Newton.....	May 27
Northern Yellow-throat.....	Newton.....	May 11	Newton.....	May 11
Yellow-breasted Chat.....	Newton.....	Sept. 12	Braintree.....	June 4
Wilson's Warbler.....	Newton.....	May 26	Public Garden...	May 18
Canadian Warbler.....	Newton.....	May 13	Newton.....	May 13
American Redstart.....	Newton.....	May 13	Newton.....	May 13
American Pipit.....	Ipswich.....	Sept. 30	Ipswich.....	Sept. 23
Catbird.....	Newton.....	May 6	Brookline.....	May 5
Brown Thrasher.....	Marshfield.....	Apr. 29	Weston.....	Apr. 29
House Wren.....	W. Roxbury...	May 23	W. Roxbury...	May 23
Winter Wren.....	Waverly.....	Oct. 14	Waverly.....	Oct. 1
Short-billed Marsh Wren...	Norwood.....	May 29	Norwood.....	June 9
Long-billed Marsh Wren...	Cambridge.....	May 27	Cambridge.....	May 27
Brown Creeper.....	Newton.....	Jan. 2	Newton.....	Jan. 8
White-breasted Nuthatch...	Newton.....	Jan. 1	Newton.....	Jan. 8
Red-breasted Nuthatch...	Marshfield.....	Apr. 4	Belmont.....	Feb. 22
Chickadee.....	Newton.....	Jan. 1	Newton.....	Jan. 8
Golden-crowned Kinglet.....	Newton.....	Jan. 2	Newton.....	Feb. 17
Ruby-crowned Kinglet.....	Arboretum.....	Apr. 16	Arboretum.....	Apr. 16
Wood Thrush.....	Newton.....	May 8	Newton.....	May 11
Wilson's Thrush.....	Arboretum.....	May 7	Newton.....	May 16
Gray-cheeked Thrush.....	Newton.....	May 27	Newton.....	May 27
Bicknell's Thrush.....	Mt. Graylock...	June 25		

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January 1, 1911, to Decem-
ber 31, 1911.

Name of Species	Locality	Date	Locality	Date
Olive-backed Thrush.....	Boston.....	May 23	Public Garden..	May 18
Hermit Thrush.....	Marshfield.....	Apr. 8	Arboretum.....	Apr. 16
American Robin.....	Newton.....	Jan. 1	Arboretum.....	Feb. 11
Bluebird.....	Newton.....	Mar. 15	Newton.....	Mar. 12
Black Tern.....	Marshfield.....	Aug. 29	Marshfield.....	Aug. 29
Baldpate.....	Brookline.....	Mar. 19	Brookline.....	Feb. 11
Shoveller.....	Marshfield.....	Apr. 18	Cambridge.....	Nov. 22
Egret.....	Marshfield.....	July 30	Marshfield.....	July 30
Northern Phalarope.....	Ipswich.....	Aug. 20	Ipswich.....	Aug. 20
Stilt Sandpiper.....	Ipswich.....	Aug. 20	Ipswich.....	Aug. 20
Western Sandpiper.....	Ipswich.....	Aug. 20	Ipswich.....	Aug. 20
Ring-necked Pheasant.....	Middlesex Fells	Apr. 22	Cambridge.....	Jan. 25
Migrant Shrike.....	Scituate.....	Aug. 29	Scituate.....	Aug. 29
Purple Grackle.....	Nantucket.....	July 1	.....	.....
Acadian Sharp-tailed Sparrow	Plum Island....	Oct. 12	Plum Island....	Sept. 23
Lark Sparrow.....	Scituate.....	Aug. 8	.....	.....
Cape May Warbler.....	Marshfield.....	Sept. 7	Jamaica Plain..	Sept. 3
Mockingbird.....	Brookline.....	Mar. 19	Brookline.....	Mar. 3
Blue-gray Gnatcatcher.....	Marshfield.....	Apr. 30	.....	.....
Caspian Tern.....	.....	.....	Hull.....	Aug. 15
Foster's Tern.....	.....	.....	Nahant.....	Sept. 31
Greater Shearwater.....	.....	.....	Provincetown..	Aug. 15
King Eider.....	.....	.....	Nahant.....	Nov. 5



INDIGO BUNTING NEAR NEST CONTAINING THREE
RECENTLY HATCHED YOUNG

Photographed by Dr. William Pepper, at Chestnut Hill, Pa., August 17, 1911

Notes from Field and Study

From the Maine Coast

The coniferous woods of Mount Desert Island, and the smaller islands that lie thickly about it, are alive with the flashing wings and lispings songs of Warblers at this time of year. The Black-throated Green Warblers are especially common. On sunny days they delight to perch in the tops of spruce trees among the thickly clustered cones, and sing with obvious enjoyment a quaint song of five notes which is phrased not unlike part of the White-throated Sparrow's song: *Sweet, sweet, Canada*. The first two notes are in a drawling, reedy tone; the last three clear and very rapid.

I was walking today (June 19) along the shingle beach in the seaward side of one of the small islands off Seal Harbor. A strip of grass land ended in a sandbank above me, and fifty yards inland was a thick spruce thicket. A stiff breeze blew from the sea, lifting the whitecaps, and I was watching the Herring Gulls wing their steady flight out to their nesting islands. Suddenly my attention was caught by a small bird fluttering over the seaweed that was pushed a little further inward by each wave of the incoming tide. A closer look showed it to be a female Myrtle Warbler. She exhibited the most extraordinary feats, in order to capture the numerous flies that haunted the seaweed, keep her balance against the strong wind, and avoid wetting her dainty person in the foam. After several minutes of such effort, she flew into the woods, but reappeared again after five minutes' interval. She made this trip three times before returning to the woods for good. Even with my glass, I could see no insects in her bill before she flew into the woods, and a search of the thicket (brief, it must be admitted) failed to reveal the bird herself or a nest. Perhaps she flew into the woods to rest from her violent exertions by the waves.

It was a strange sight to see this dainty bird (even though the Myrtle Warbler is one of the hardiest members of the family) fluttering over the wave-beaten seaweed in the teeth of a strong wind from the open sea. I should have expected it of a Sandpiper. But perhaps the Myrtle Warbler sought a change of scene and a taste of sea-food.—TERTIUS VAN DYKE, *Seal Harbor, Maine*.

Bird Notes from Collins, N. Y.

Prairie Horned Larks were numerous all winter—at least 150 or 200 in a flock—and many are here still. This is a 500-acre farm, next door to woods and the extensive Seneca Indian reservation, which is an ideal place for bird-study. The secretary of the Audubon Society of Buffalo was very enthusiastic over it during a recent visit. The neglected pastures, thickets, tangles, and scrubby undergrowth attract numerous birds—notably Chestnut-sided Warblers, Indigo Buntings, Chats, Catbirds, Thrashers, Rose-breasted Grosbeaks, Tanagers, Towhees, etc. Killdeer are numerous. Holboell's Grebe is seen at every spring migration.

This year was an exceptional one for Warblers, which were a week earlier than usual. The Blackburnian was very abundant, also the Black-throated Blue, Wilson's, and Magnolia. The following Warblers are nesting here in abundance: Black-throated Green, Parula, Hooded, Redstart, Ovenbird, Black and White, Maryland Yellow-throat, Yellow, and Chestnut-sided. There is an occasional Black-throated Blue and Chat and, ever since June 1, a male Mourning Warbler has sung daily in the same tree at the edge of a tangled undergrowth on a hill-side. The Indian who lives near says he was there last year also. He sings for half an hour at a time in the top of a hemlock, and I have had abundant

opportunity to study him closely, and hear his *tse tse tse truey truey*. I do not see the female, but believe there must be one nesting near.

Goldfinches are always abundant here, but never more so than this year; literally hundreds of them came in May.

Bluebirds seem all but extinct. Possibly this may be due to the extraordinarily severe winter.—ANNE E. PERKINS, M.D., *Collins, N.Y.*

Unusual Visitors in Massachusetts

The South Shore of Massachusetts is such a famous summer resort that even the birds seem to be aware of its advantages. To paraphrase the society papers, "among the notable visitors from a distance" I wish to report a Cardinal and a Carolina Wren, observed in Duxbury last summer, and a Lark Bunting noted at Marshfield in June, 1907.

None of these are shot-gun identifications, but I believe them to be positive, nevertheless. The Carolina Wren I heard singing on several week-end visits, but it was not until September that I was able to observe and fully identify the bird, although it haunted my apple trees.

The Cardinal I report for the observer, Mr. Paul C. Peterson, of Duxbury, who wrote me June 10, 1911, as follows: "I was out in my garden and saw this beautiful red bird. I was within twenty-five feet of him and had a very good view. The female was with him, but not much for looks." A visit to the Boston Natural History Museum brought instant recognition. The birds were also observed about June first by a summer resident.

My own most notable record was made June 9, 1907, while driving at Green Harbor, Marshfield. A black bird with white wing patches was feeding with some English sparrows in the roadside chaff. The bird being absolutely strange to me, I observed it very carefully, and, as it proved quite fearless, I was able to get close enough to note even the shape of its bill and feet, and to identify it as one of the *Fringillidae*—all black except the

wing coverts and a few lesser white markings. It seemed very fond of the half-ripe achenes of the wayside dandelions, which it obtained by jumping from the ground and biting through the base of the flower-heads, each time alighting with a mouthful of the white pappus. At home, Chapman's 'Handbook' gave me no assistance whatever, and neither did my other books on New England birds until in Reed's little Pocket Guide I found a portrait and a brief description of the Lark Bunting, *Calamospiza melanocorys*,—"Range,—Western U.S., from Kansas to Colorado and north to Assiniboia." Chamberlain's Nuttall says it "has been seen in Massachusetts and Long Island,—the only instances of its occurrence east of the Great Plains." A female was shot in Maine a year or two ago, and is in the Boston collection.—JOHN B. MAY, M.D., *Waban, Mass.*

A Long Island Brown Pelican

On Sunday, May 26, Mr. L. Griscom and I made a trip to Oak Island Beach, L. I., and vicinity, to study shore and marsh birds. At the extreme western end of Oak Island Beach, on the bay side, we saw a Brown Pelican, *Pelicanus fuscus*. The bird was seen first standing in shallow water a few rods from the shore. We watched it from 1:45 P.M. until 3:30 P.M., when we left to take a boat to the main land. During that time it swam about, preened itself, caught food, and rested quietly in the water. Mr. Griscom used a 9-power Bausch binocular, and I had a Lemaire field-glass of about 5-power. We got within 100 to 125 yards from the bird and studied it at our leisure. Glasses, however, were not needed to identify it. As this is, probably, the second record for New York state, we shall be glad to have it published in BIRD-LORE.—JULIUS M. JOHNSON, *New York City.*

How the Gulls Won the Vote

About three years ago, the Beverly flats became suddenly and mysteriously

covered with dead and dying herring. Outgoing tides and hot suns soon did their work. The stench was intolerable. City carts and laborers were pressed into service, to carry away the foul carcasses. Property owners abutting the coasts set their servants to clearing the beaches.

In vain; no sooner was the coast fairly well cleared of the deposit than the next tide would roll in masses of the little creatures, till their gleaming forms lay again as in "windrows" along the hot sands. People along the waterways fell ill, and even the inhabitants of the hills to the northward dared not open their windows.

Suddenly, out of the north (did they smell our flats in Labrador?), and from the islands along shore, came back our Gulls, with many of our Common Terns. These seized upon and devoured the herring by hundreds. The carts had still to be kept going, but the decrease caused by the birds was so apparent that thoughtful people everywhere in town exclaimed: "Oh that we had more Gulls!"

The next year, when Massachusetts legislators were being tormented with appeals for the privilege of shooting Gulls, we had only to remind the careless ones of the herring incident, and the good work of our Gulls and Terns in that and similar instances, to call forth enthusiastic and hearty support of the birds' protection. Beverly stood firmly in their favor.

The Gulls and Terns are the natural scavengers of the coast, who while sailing hither and thither on wings so swift, graceful, and powerful, challenging our almost breathless admiration, and enhancing to so surprising a degree the charm of coast scenery, are bent on errands of mercy for all mankind.

Yet we see even now, at intervals, a pair of Gull's or Tern's wings with a breast of the same in ghastly array on some lady's (?) hat.

Were the victims killed on our shores because of the limited number of our deputies and the lack of watchful care of private individuals? Were they worn because of the lack of moral courage of

some of us to "speak up" in behalf of creatures so beautiful? They have no language with which to appeal to crude and coarse cumberers of the earth.—
ANNIE CHASE, *Beverly, Mass.*

The Semipalmated Sandpiper as a Marsh Bird

The two smallest of our shore-birds, The Least and Semipalmated Sandpipers, although really not closely related, so resemble one another in color, appearance and habits, that they are not easily distinguished in life.

During the spring and fall just passed, the writer has seen many of both species



LEAST SANDPIPER

on salt and fresh meadows, in the vicinity of New York, and has been surprised to find the Semipalmated Sandpiper as abundant as the Least on the meadows, having previously had the impression that it was more a beach than a meadow bird. In the late summer of 1911, both species were seen on the meadows and mud-flats along the south shore of Long Island. Great difficulty was experienced in telling them apart. The more slender bill and paler legs of the Least Sandpiper were difficult to make out in the living bird, and there was great variation in the color of the Semipalmated Sandpiper, some of the specimens, perhaps the young, being as dark as the other species. In

May, 1912, this same difficulty was not experienced; the Semipalmated Sandpipers were uniformly pale, with breasts much more lightly marked than in the other species. Two or three were seen with moderate numbers of the Least Sandpiper, at Englewood, New Jersey, on fresh water meadows, and even in a wet field, and, on May 31, about 150 were feeding in some brown marsh stubble, at Mastic, Long Island. Running actively about, and in plain sight on the gray-brown marsh, their colors harmonized so admirably with it as to render them well nigh invisible. Many Swallows were beating close over the ground, among them Tree Swallows and one or two big black Martins. A Bank Swallow, which alighted motionless on the ground, was quite conspicuous; whereas three or four Sandpipers running about near it, could hardly be seen. A flock of them took wing and began to dart about in the air. It swung out over the bay, close-packed, and at high speed, and with wonderful precision wheeled and came back to the marsh again.

The next day, June 1, there were only about twenty-five Sandpipers left. They were very restless and drifting away southward toward the ocean in small companies of five or so, as though bound north by sea. The first of June is a day later than the writer knows of their previously being recorded from Long Island. The Tree Swallows were now no longer on the meadows.

The Least Sandpiper, of which a photograph is published, had yellow legs. The legs of those observed in the fall migration were more greenish.—JOHN TREADWELL NICHOLS, *Englewood, N. J.*

An Eagle Story

"Westport, Conn., June 14.—Screaming with all the power that her little lungs could develop, her strange cries reaching her father's ears, was all that saved little Emma, two-year-old daughter of Randolph Kreiwald, from being carried off by a huge American Eagle. The piercing cries reached the father, who, running out, saw the

huge bird, with its talons dug deep into the clothing of his child, about to lift its prey from the ground." etc.

So runs a thrilling story that has traveled far through the daily press—a story distorted, exaggerated, and most of it born in the brain of the newspaper reporter.

Yet there was an Eagle so near that the parent believed, and still believes, that it meant to attack his child, and the bird, an immature Bald Eagle, was shot by the child's father.

The facts appear to be that the little flaxen-haired child was playing in the sand in the corner of a grape arbor and an arborvitæ hedge, about forty feet from the back door, when, attracted by the child's screams, the father rushed out to see the Eagle perched upon the grape arbor about eight feet above his child's head.

The Eagle flew off, as the frightened parent grabbed his child and carried it into the house to its mother, and, taking his gun, he ran out and toward the Eagle, which was now perched in a tree at some distance from the house.

As he advanced he claims that the Eagle swooped toward him, and he shot twice. Noticing that the bird was settling, he followed, and found that it was dead.

There seems no doubt of the truth of this; and the explanation would appear to be that the Eagle, soaring high in air, saw the child's head above the grass over the top of the arbor, and mistook it for other food, and stopped on the arbor on finding his mistake.

Four pieces of undigested fish showed the nature of the Eagle's last repast.—WILBUR F. SMITH, *So. Norwalk, Conn.*

A Screech Owl Incident

February 10, 1912.—While on a ramble along a country road, I saw, on a fence-wire across a meadow creek, a bunch of reddish feathers, which upon investigation proved to be a Screech Owl. It had in some manner, during the previous night, flown against and caught its wing on a barb. There it was when I found it,

perched upright, one claw over its entangled wing, and its eyes closed. After a little difficulty, I managed to release it, and, upon examination, found that none of the tendons of the wing were injured, but that the wing feathers were badly twisted and broken. It must have put up a pretty hard tussle before giving up, as it offered no resistance when I was releasing it, outside of a few clicks with its bill.

I carried it to a bunch of evergreens near-by, and there released it. A couple of times it uttered a note very similar to the mew of a kitten—the same note that this Owl so often utters during the evening.

This is the first time that I have found a bird entangled, alive; but many times I have seen the dead bodies of Coots, Blue-winged Teal, Blackbirds, and others, dangling from the barb-wires.—ADRIAN LARSEN, *Sioux Falls, S. D.*

Note on the White-throated Sparrow

In the March-April number of BIRD-LORE, I notice that Prof. W. W. Cooke records the White-throated Sparrow as "Rare, winter," in Philadelphia. I have studied bird-life in Philadelphia for the past ten years and have always found the White-throated Sparrow to be a common winter resident, arriving about September 20, and leaving in May. During this time the bird is often in song, especially on moderate days, just before sunset and early in the morning. In fact, the White-throat is one of the commonest winter birds in Fairmount Park and Germantown, Philadelphia.—A. F. HAGAR, *Princeton, N. J.*

A Vireo Courtship

For sheer persistence in singing, the Red-eyed Vireo finds few rivals on his breeding-ground. The heat of summer does not silence him; the molting period depresses him surprisingly little. He spends thirteen weeks with us of uninterrupted cheerfulness and energy expressed in song. All day, until the sun sets, he

sings, just pausing long enough between his clear-cut, rapid phrases to snatch up and swallow his food, until sunset, then he is silent.

In the morning twilight, when it is too dark to see clearly, half an hour before day, he sings without pause. Now, the phrases follow each other very rapidly and evenly with pulse-like regularity; in sixty seconds he gives eighty.

I once met this voluble, energetic bird in a quiet mood, and at the time I made this note of its actions (it was in Lexington, Mass., on May 30, 1909):

"This afternoon about six o'clock, I saw a pair of Red-eyed Vireos acting in a manner new to me. They were in a small gray birch tree, twelve feet from the ground, and almost over my head. The two birds were very near each other; so near that their bills might have touched, although they did not. The male, or at least the bird who played the active role, faced the side of the other bird, so that their bodies were at right angles. The bird who, from her passive actions, I assumed, but perhaps wrongly, to be the female, sat crouched low on her perch, with the feathers slightly puffed out. But, although in the attitude of a sick bird, she appeared in good health, I thought, and I am certain, that she gave close attention to the strange actions of her companion. The bird I have called the male, and I think it is safe to so consider him, was constantly in motion. He rocked his body, especially his head, from side to side, his bill sweeping over the upper parts of the other bird, never touching her, nor, indeed, coming very near it, for his head was above and a little to one side of her back. In swinging from side to side, he moved slowly, but with a tenseness suggesting strong emotion. In contrast to the fluffy female, the feathers of the male were drawn closely about him, so that he looked slim and sleek. The neck seemed constricted, giving him a strangled appearance.

"Neither bird opened its beak, but one of them continually uttered, with no suggestion of Vireo phrasing, some faint notes

in a thin, almost squeaky tone, nearly as high-pitched as a Kingbird's voice. I thought when I first heard the notes and stepped aside to identify the bird, that a Goldfinch was singing very softly under his breath. There were the same little trills, and, in between, the same sustained notes, the whole suggestive of the Goldfinch, but very quietly and gently given. It was as if a Goldfinch who had lost much of his power and all of his energy were whispering his song into the ear of his lady-love."

The following note shows that this strange deportment is not confined to the courting season.

"Aug. 18, 1909.—The Vireos have been about the place much of the day. A young bird sat on a bare branch and gave its *theet, theet* call. An adult (with full-length tail, but body feathers molting) alighted near. The young bird reached toward it with open bill. The old bird drew itself up so that it was tall and thin, its feathers tight about its body, then rocked back and forth, pointing its bill first to one side and then to the other of the young bird, as they sat facing each other. It was as if the parent were casting a spell over its young."—WINSOR M. TYLER, M.D., *Lexington, Mass.*

Hooded Warbler at Hartford, Conn.

On May 2, 1912, in Keney Park, Hartford, Conn., I had the pleasure of seeing a *Hooded Warbler*, it being the first and only one seen in this vicinity so far as I can ascertain.

My father and I were at the park just at daybreak, hoping to see the early migrants, but there were not many about. Finally we saw a Warbler flitting about in the underbrush and birches, but it moved so quickly that we were at first unable to identify it, and we followed it for quite a distance before we discovered that it was a Hooded Warbler, a bird we had long hoped to see.

At last it perched on a small limb of a young oak tree, and began to preen itself, when we had an opportunity to study it.

Its hood of black coming to a rounded point on its breast, and the black eye nearly in the center of the yellow on its head, gave it a peculiar effect, but a rather pretty one. The yellow on the head and breast seemed very bright in contrast with the black hood.

It did not sing while we were watching it.

Two of our friends came along just in time to see it; so there were four of us who had the pleasure of seeing this rare bird.

We looked about in the hope of discovering more of them, but this one seemed to be alone. He did not stay long in that vicinity, but went north rapidly and was soon lost to sight. Warblers have been very plentiful here this spring, and a great many varieties were seen.—EVERETT D. DOW, Member of Hartford Bird Study Club.

Notes on the Bluebird and Robin

We were interested in the item in the May-June BIRD-LORE, asking "Where are the Bluebirds?" In 1909, and 1910 we had in our box a pair that raised two broods each year. They returned in 1911, and the eggs were laid only to be thrown out by English Sparrows. Too late we learned that it was because the vine had grown near the opening of the box, thus affording the perch necessary to the English Sparrows, but not to the Bluebirds. After the vine was removed, the Sparrows never entered the nest. The Bluebirds left, and raised a brood in a hole in a neighbor's apple tree. This year we put up more nesting-boxes, but no Bluebirds claimed them. In 1911, they had noticeably increased, hereabouts, but this year we have seen very few, and have wondered why. Since our experience with English Sparrows we have taken down several of their nests from neighbors' houses, and have shot a few in our own yard, but we are not yet free from them. The neighbor who sheltered our Bluebirds also takes down Sparrow nests and shoots the birds.

A white-marked Robin, with a mate of

the ordinary appearance, raised two broods in our trees in 1911. Several of his long wing-feathers were white, and the upper half of the tail-feathers (except the middle ones) was white. This year, on April 18, a Robin came to us with broad, white wing-bars, and several white feathers in each wing. The tail had only a rather large white spot on each corner, and the rump was whitish. He and a plain Robin had a nest high up in the branching of a maple, less than twenty feet from the house. On the morning of May 25, a very young nestling was found on the ground below the nest. A Crow had been seen two mornings before, in a neighboring tree, and we wondered if he had done the mischief. Early on the morning of May 27, the Robins were hopping anxiously about in their tree, making low alarm notes. They occasionally went and looked into their nest, and once the mother settled down upon it for a short time. At about 5 A.M., there was an outcry, and I looked out in time to see a great Crow approaching the nest, followed by both Robins. He quickly reached it, and I rushed to the door to frighten him away. He went at once, but probably took the last young Robin with him, for though the parents stayed in the tree a short time, hopping nervously about and making low notes of alarm, they never went to the nest again. On May 30, they began a new nest in the elm that was used for a home tree by the white-marked Robin of last year, and at present writing (June 10) all is well.

This year, in the pine tree of a near neighbor, is the nest of a Robin that has a long wing-feather that is white. We wonder if it is the child of our last year's albino.—ELIZA F. MILLER, *Bethel, Vt.*

January Bluebirds

On the afternoon of January first, with the ground snow-covered and the temperature below freezing, I saw two Bluebirds, both males, in the park at Auburn-dale, Mass. In eighteen years I have never before had the fortune to see Bluebirds in January.—WM. FULLER, *Auburndale, Mass.*

Killdeer in New Hampshire

It is interesting to know that a pair of Killdeer Plovers are nesting near here. These birds have become so nearly extinct in this part of New England that one lone individual, seen on the salt meadows in March, 1901, is the only note that I have made of them hereabouts.

The pair that are nesting here I saw for the first time about two weeks ago. They were in an open pasture, five or six miles from the sea. At first sight, I mistook them for Sparrow Hawks, which they resemble in their manner of flying. They had young ones hidden somewhere near, for they kept flying about me at no great distance, then coming to the ground and running along with trailing wings. I shall be very glad to learn that these most interesting birds are returning to their old haunts, for they are said to have been very common all along the New England coast in earlier days.

I believe that if the close season on all beach and marsh birds were fixed in all states from the first of January to the first of September, these, as well as the Upland Plovers, would soon be fairly abundant again.—W. E. CRAM, *Hampton Falls, N. H.*, June 13, 1911.

Note on the Screech Owl

May I add one word more, relative to a query raised by Mr. Clarke in the July-August, 1911, number of BIRD-LORE, p. 192? It is there stated that a wounded Barred Owl was found which had apparently refused to leave a tree that was being cut down. In taking the roof off a bird-box the whole box was violently shaken, but in it I discovered a full-grown Screech Owl crouching defiantly. If all this rough treatment failed to drive the bird out into the unwelcome daylight, it is not hard to believe that the Barred Owl may have refused to leave a tree at which the choppers were working.—W. G. CADY, *Middletown, Conn.*

Book News and Reviews

STUDIES IN BIRD MIGRATION. By WILLIAM EAGLE CLARKE, Keeper of the Natural History Department, the Royal Scottish Museum. With Maps, Weather Charts, and other Illustrations. London, Gurney and Jackson: Edinburgh, Oliver and Boyd. 1912. 2 vols. 8 vo. xiv+323, viii+346 pp, xxv, plates.

One cannot read this important work without being impressed by the enthusiasm which, year after year, has induced its author to pursue his field studies often under conditions which only one inspired and stimulated by genuine love of his subject could have successfully encountered.

Few men have had wider personal experience in the study in nature of bird migration, and, fortunately for the science of ornithology, in publishing the results of his prolonged observations, the author has not presented absurd hypotheses as facts, but has marshaled his vast amount of data in a manner which makes his work an authoritative source of information.

Americans particularly should be grateful for the labor which has placed within their reach an exhaustive survey of migration phenomena in Great Britain, and the publication of these volumes removes further excuse for our ignorance in this direction. When will some American ornithologist make ignorance of the facts connected with migration in America equally inexcusable in Great Britain?

After an introductory summary of ancient and modern views concerning the migration of birds, Mr. Clarke, in approaching his own special field, writes: "It may be asserted, without fear of contradiction, that no country in the world is more favorably situated than our own for witnessing the movements of migratory birds; that there is none in which the many phases of the phenomena are of a more varied nature. . . ." Nevertheless, but not without fear of contradiction, we venture to claim that

our own country affords the local student of migration even greater opportunities for observation than are to be found in Great Britain, while in any broad, general survey of the subject and its underlying causes, the student in America has inestimable advantages. A much larger list of migratory birds, more pronounced seasonal changes, and more highly diversified topography, including river valleys and mountain chains (the latter permitting a study of altitudinal migration), and, above all, a breadth of territory in which, happily, a chain of coöperating observers, all reporting to a government bureau, can follow some species throughout their entire migrational movements, and others from the Gulf of Mexico to the Arctic circle, are to be numbered among the special advantages of the student of migration in America, as every one familiar with Professor Cooke's papers will readily admit. On certain points in the Great Lakes, and on headlands and islands along our coasts, we also enjoy those opportunities for the study of the seasonal journeys of birds under those conditions which Mr. Clarke so admirably describes.

Excess of ornithological patriotism, however, must not lead us from a further consideration of Mr. Clarke's valuable work which, after a detailed seasonal analysis of British bird-life, discusses it from a geographical aspect with particular reference to places of arrival and departure and routes of migration, and in this chapter and a succeeding one on "Weather Influences" are recorded many facts of wide general interest.

Mr. Clarke then selects for treatment in detail several abundant and highly migratory species, the remainder of Volume I being devoted to a report of his observations at the Eddystone lighthouse.

The second volume is wholly given to records of the author's observations on

the Kentish Knock Lightship, Fair Isle (where an assistant was employed to conduct observations throughout the year), St. Kilda, the Flannan Isles, Sule Serry, west of Orkney, and the Isle of Ushant, all localities selected with special reference to the opportunities they afford the student of migration, and well selected, as the truly remarkable results obtained clearly show.

Mr. Clarke's personal experience is so extended that the book which he modestly calls 'Studies in Bird Migration' is in truth a general treatise on the subject of bird migration in Great Britain; and, while acknowledging the debt under which he has placed foreign ornithologists particularly, we trust that we do not seem ungrateful in expressing a regret at the absence of a bibliography.—F. M. C.

FIRST REPORT OF THE MERIDEN BIRD CLUB, 1911. 8 vo. 68 pages, 18 ills. For sale by the Secretary of the Club, at Meriden, N. H. Price, \$1.00

The spirit in which it is written, the suggestions it contains, and the achievements it records make this report one of the most valuable contributions to bird conservation, and what we may term civic ornithology, with which we are familiar.

From it one may obtain practical hints on winter feeding, the control of cats, red squirrels, and English Sparrows, on nesting habits, bird-baths, and other methods designed to increase the number of birds about our homes; and, more important still, from this report one may learn how an entire village was awakened to a realization of the worth and beauty of its bird citizens, and of its duty toward them.

Given the right kind of a "General Manager" to organize, inspire, and tactfully pull or push, as occasion requires, and we do not see why bird clubs with similar objects cannot be formed throughout the land. Should this day ever come, we shall have gone a long way toward establishing ideal relations with our feathered neighbors.—F. M. C.

THE BIRD CLASSES OF THE AUDUBON SOCIETY OF THE DISTRICT OF COLUMBIA; 1898-1912. Published by the Society and to be obtained on application to its Secretary, Miss Helen P. Childs, Chevy Chase, Md. 8vo. 8 pages, 1 plate.

The history of the Audubon Society of the District of Columbia, summarized in this pamphlet, is a record of definite achievements. With its membership focussed in a small area and with an exceptional number of professional ornithologists to call on, this Society has successfully met a situation in which most Audubon Societies fail by *giving its members something to do*.

We have long looked forward to the day when membership in an Audubon Society would have other than merely negative qualities, and the District of Columbia Society in its talks, lectures, laboratory exercises, and field meetings has demonstrated what may be accomplished in making an Audubon Society not merely a factor in the preservation of birds, but an efficient organization for the study of bird-life.—F. M. C.

THE FLIGHT OF BIRDS. By F. W. HEADLEY. With sixteen plates and many text-figures. Witherby & Co., 326 High Holborn, London. 1912. 12mo. 163 pages. Price, 5s, net.

Readers of Mr. Headley's 'Structure and Life of Birds' will recall the large share of attention given to the flight of birds in that volume. The subject evidently has special interest for him and he writes as an ornithologist and physicist well posted in regard to the recent great advances in aeronautics. His volume appeals, therefore, both to bird-men and air-men. While the illustrations have been selected to demonstrate certain points, they are far from doing justice to the camera's important contributions to the ways of a bird in the air.—F. M. C.

CASSINIA; PROC. DELAWARE VALLEY ORN. CLUB XV, 1911. Philadelphia, Pa. 8vo. 80 pages, 3 plates.

Cassinia opens with a readable and informing biographical sketch, by Samuel

N. Rhoads, on 'Constantine S. Rafinesque as an Ornithologist,' which is accompanied by a portrait of that eccentric naturalist; Spencer Trotter writes on 'The Frontier of the Carolinian Fauna in the Lower Delaware River;' Richard C. Harlan on 'The Center Furnace Swamp;' Cornelius Weygandt on 'The Summer of Fire and Bird Adaptation;' while Herman Behr contributes some valuable notes on the former abundance of the Passenger Pigeon in Sullivan and Wyoming Counties, Pennsylvania, and gives a striking pen picture of a flight of Pigeons when "the sky was full of them, a perfect maze of beating wings, cut here and there by rifts of blue."

'Down the Pocomoke,' by George Spencer Morris, is a pleasing piece of descriptive writing, and, under 'general notes' John Dryden Kuser writes on 'Birds Observed near High Point, New Jersey, July 19-September 10, 1911,' and Robert P. Sharpless supplies a biographical note concerning Wilson's engraver, Alexander Lawson.

The report on the spring migration is, as usual, compiled by Witmer Stone, who calls for additional observers, and the 'Abstract of the Proceedings' of the meetings of the Club shows no falling off in support among the members of this virile organization.

With an evident appreciation of his responsibilities, Robert Thomas Moore, who succeeds Witmer Stone as editor of 'Cassinia,' writes that with the call of Stone "to the editorial chair of 'The Auk,' 'Cassinia' suffered a great loss, which at the moment seemed irreparable. For two decades he has guided all the publications of the D. V. O. C., first as chairman of its Publication Committee, which brought to light the Proceedings from 1890 to 1900, then as Editor of 'The Birds of Eastern Pennsylvania and New Jersey,' and finally in the same capacity for 'Cassinia' during the ten years of its existence. That each of these ventures has proved successful, has been due largely to his tireless energy, his steady enthusiasm, and wise control at moments of stress. Whether at the helm of 'Cassinia' or on the floor

of the Club, it was he that suggested and enlarged, it was he that pressed for completion." We may well believe, however, that this tribute from the new pilot indicates his fitness to take command.—F. M. C.

THE SPELL OF THE ROCKIES. By ENOS A. MILLS. With illustrations from photographs by the Author. Houghton, Mifflin & Co., Boston and New York. 12mo. xii+355 pages.

The Catskills have Burroughs, the Sierras, Muir, and, with each succeeding tribute of his pen, Enos Mills is making the Rockies more and more his own.

With a more rugged environment than is to be found in either the Atlantic or the Pacific range, and with a mountaineering temperament which even Muir might envy, Mills' experiences—adventures they may well be called—have strong human interest, while his studies of the forests, and certain of their inhabitants, show him to be a close and enthusiastic student of nature.—F. M. C.

THE BIRDS OF SOMERSET HILLS. By JOHN DRYDEN KUSER. Published by the author, 1912. 16mo. 160 pages, 22 colored plates.

In this unusually attractive little volume the author records his observations on the birds in the region about his home at Bernardsville, New Jersey. He writes with the care of a student and the enthusiasm of a genuine bird lover, and we trust that this marks but the beginning of his contributions to the literature of ornithology.—F. M. C.

SOME COMMON GAME, AQUATIC, AND RAPACIOUS BIRDS IN RELATION TO MAN. By W. L. McATEE and F. E. L. BEAL. Farmers' Bull., 497, U. S. Dept. of Agriculture, 1912.

This paper adds to our available supply of accurate information in regard to the food habits of birds by treating of a number of species whose exact economic status has not heretofore been determined. The Horned Grebe, for example, "Sometimes accused of living entirely upon fish, is here shown to feed largely

on Crawfish, other crustaceans, and insects. Terns, also, have been held responsible for the serious reduction of food-fishes in some localities, but a careful study of their food habits demonstrates that only a small proportion of their diet consists of such fishes."

Among the species treated are the Prairie Chicken, California Quail, Ruffed Grouse, introduced Pheasants (*Phasianus*), Upland Plover, Killdeer, Franklin's Gull, Common and Black Terns, Cooper's, Rough-legged, and Sparrow Hawks, Long-eared and Screech Owls.—F. M. C.

THE BIRDS OF THE JEFFERSON REGION IN THE WHITE MOUNTAINS, NEW HAMPSHIRE. By HORACE W. WRIGHT, Proc. of the Manchester Inst., V, part 1, 1911. 8vo. 126 pages.

The author states that "the region covered in this paper includes primarily the town of Jefferson, also that of the adjoining towns of Lancaster, Whitefield, Carroll, and Randolph, and the northern and western slopes of the Presidential Range to the Crawford House plateau." In this area he has "carried on active and systematic observation for twelve successive seasons, beginning with 1899. The period of my observation, year by year, has extended from late May or the first days of June to the early days or the middle of October."

For observations on winter birds, Mr. Wright is fortunate in having had the cooperation of F. B. Spalding, long known as an authority on the birds of Lancaster. It is evident, therefore, that he is in a position to speak with authority on the bird-life of the region in question, and to discuss the various faunal changes which have occurred within the period covered by his studies.

The list proper treats of 188 species and subspecies of birds, the annotations relating mainly to the manner, place, and time of occurrence, and to their song periods; and the information here presented makes this paper the starting point for all further bird work in the Jefferson Region.—F. M. C.

The Ornithological Magazines

THE CONDOR:—The May number of 'The Condor' contains only two general articles, 'Some North-central Colorado Bird Notes,' by E. R. Warren, and 'An Afternoon's Field Notes,' by Joseph Grinnell. Warren's paper, accompanied by a map and reproductions of twelve photographs, is an account of an extended wagon trip made in 1911. Leaving Colorado Springs, May 18, he traversed the plains northeastward almost to the northern boundary of the state, then traveled westward to Steamboat Springs, and thence back to Denver which was reached August 8. Although 105 species of birds were observed on the trip, there was a remarkable scarcity of Vireos and Warblers. No Vireos were seen; Macgillivray's Warbler and the Pileolated Warbler were each seen once, and the Yellow Warbler was found at half a dozen places.

Grinnell's paper is an excerpt from a field note-book presented as an illustration of rather full notes in narrative style, as they were written on the spot. It is a record of two hours' observation of birds, at Glendora, Cal., during an afternoon in May, 1907. With the author's contention that a card system for field notes is absolutely impracticable we can not agree. Some collectors find it very serviceable within certain limits, and the notes here given could easily be recorded on cards if the observer were so inclined.

Among the short notes, Chambers calls attention to an inexcusable slaughter of Band-tailed Pigeons which occurred during the past winter near Los Olivos in Santa Barbara County. He estimates that about 3,000 were killed in one day. For some reason the Band-tailed Pigeon has never had adequate protection in California, and it should be removed at once from the game list, if it is not soon to suffer the same fate as the Passenger Pigeon.

Hersey records "Two New Birds of Colorado"—the Lapland Longspur taken December 28, about 18 miles northeast of Denver, and the Sierra Thrush, of

which four specimens were obtained near Golden, May 2, Holly, May 16, and Granby, October 7; but in no case is the year given, and the records are consequently incomplete.

In the minutes of the Cooper Club meetings appears a report made by a committee to the Southern Division, on March 28, on certain proposed amendments to the game laws for southern California. The report includes open seasons and bag limits for the various game birds, and recommends a two-year close season for Ibis, Avocets, Stilts, Godwits, Yellow-legs, Willets, Curlew, Mountain and Black-bellied Plover, and indefinite protection for Phalaropes, Dowitchers, Snowy Plover and certain other Warblers. If ornithologists elsewhere would make similar recommendations in a way to reach the great body of sportsmen, the question of 'seasons' in our game laws might be placed on a more logical and satisfactory basis.—T. S. P.

Book News

'BIRDS and Nature Study, a Pamphlet for the Use of Teachers,' by Gilbert H. Trafton, is a mine of practical information from which teachers cannot fail to draw valuable suggestions. It can be obtained from John C. Coulter, Bloomington, Ill., at ten cents per copy.

THE Alabama Bird Day Book, prepared by J. H. Wallace, Jr., State Game and Fish Commissioner, and issued by the Departments of Fish and Game at Montgomery, is a model publication which reflects credit alike on its compiler and the State under the auspices of which it appears. It contains 64 pages of well-selected material and eight colored plates, and should exercise a most potent influence in arousing an interest in birds and bird study in Alabama.

THE Arbor and Bird Day Annual of Wisconsin is, as usual, an elaborate and well-conceived publication in which,

among other things of interest and value to bird students, Mr. and Mrs. I. N. Mitchell present the sixth in their series of biographies of Wisconsin birds. The yearly appearance of this admirable manual is, no doubt, in a large measure responsible for the widespread interest in birds which exists in Wisconsin.

An effective address, by Dr. William Fremont Blackman, president of the Florida Audubon Society on 'The Economic Value of Birds to Farmers and Fruit Growers,' and delivered by him before the Florida State Agricultural Society, has been printed in pamphlet form by the Audubon Society, from which it may be obtained at Maitland, Florida.

IN No. 8 of Vol. 7 of the 'Museum News' of the Brooklyn Institute of Arts and Sciences, Mr. R. C. Murphy presents a nominal list, mainly on the authority of Dr. E. W. Viator, of the 147 species of birds which have been observed in Prospect Park, Brooklyn.

A PAMPHLET by Alexander Walker and Eugene C. Ford, describing the habits of 32 of the common birds of Douglas County, South Dakota, seems well-adapted to achieve the authors' purpose of arousing an interest in birds in the school children of the region in question. It may be obtained from the authors, apparently at Armour, S. D.

ANIMAL Sanctuaries in Labrador' is an eloquent, informing and convincing address presented by Lt. Colonel William Wood before the second annual meeting of the Canadian Commission of Conservation, at Quebec, in January, 1911. Copies of it may be obtained from Colonel Wood, at 59 Grande Allée, Quebec.

SOME Notes on the Summer Birds of Southwestern Nebraska,' by M. H. Swenk and J. T. Zimmer, treats of 53 species and appears in pages 39-49 of Part 4 of Volume 5 of the Proclamation of the Nebraska Ornithologists' Union.

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Contributing Editor, MABEL OSGOOD WRIGHT

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Bird-Lore's Motto:

A Bird in the Bush Is Worth Two in the Hand

WE trust that Mr. Frederic H. Kennard's 'List of Trees, Shrubs, Vines, and Herbaceous Plants Native to New England, Bearing Fruit or Seeds Attractive to Birds,' which appears in this issue of BIRD-LORE, will itself bear fruit by inducing hundreds of BIRD-LORE readers to make practical use of the information it contains. Many of the plants listed can be secured from nurserymen, or specimens which might never mature in nature may be transplanted from the woods or fields to our lawns and parks. But few of them are without beauty of their own, and when they are both beautiful and useful they have a double claim to our interest.

THE fact that Mr. Kennard's paper originated in the plan of the Meriden Bird Club, to make a piece of land which it had acquired additionally attractive to birds, is only one of numerous reasons why we particularly call the attention of all bird students to the first report of this club, which is briefly noticed on a preceding page. How the birds of Meriden have been accorded their true standing as citizens of the village is therein recorded in a manner which must convince one that in organizing this club many of the problems of bird conservation have been successfully answered.

THE Editor continues to receive an increasingly large number of records of the occurrence of birds far beyond the limits of their known ranges. Usually

only a single individual is observed, but not infrequently several are reported, and in one instance, in an Atlantic Coast state, an abundant eastern species was said to have been largely replaced by a Pacific Coast bird! In some cases, the attending circumstances make the observation obviously authentic and worthy of record; in others, they quite as obviously betray the observer's failure to realize the requirements on which accurate field identification must rest. Some descriptions are ludicrously inaccurate, even when recognizable; while others give details of color, size, and form such as belong to no known bird, and in comparing them with the descriptions of skilled observers, one realizes how greatly true bird study tends to develop accuracy in observation.

We have, however, known professionals to mistake a male Cowbird for a Blue Grosbeak, a male English Sparrow for a Black-throated Bunting, and even a Myrtle Warbler for a Nonpareil or Painting Bunting, a presumably impossible error; while a "Glaucous Gull" identified at a range of "ten feet" proved to be a Herring Gull which had lost the black tips to its primaries by trimming!

The trained ear detects the presence of species the eye may not discover, but even with the commonest birds one cannot use too great caution here. We recall how one of the keenest of American field ornithologists identified a Catbird, by its voice, as a White-eyed Vireo, and we even know of a case in which a Whip-poor-will proved to be—a lady!

AN instructive indication of the growing popularity of birds with the community at large is supplied by the proprietors of a certain brand of chewing-gum whose advertisement assures purchasers of their wares that they will find a colored picture-card of an American bird in every package, while fifty such pictures may be redeemed for a book on birds containing colored figures of fifty different birds! Verily the ornithological millenium is approaching when we absorb bird-lore with chewing-gum!

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, at 53 Arlington Avenue, Providence, R. I.

THE VACATION SPIRIT

PRESIDENT Harper, one of the most active and advanced men of his generation, is said to have been opposed to the vacation idea from the point of view of simply idling away twelve weeks each summer, with no definite purpose or employment. Like certain other highly successful educators, he advocated a training which should enable one to find recreation in a variety of interests and occupations, without sacrificing a quarter of each year aimlessly. To some teachers who are already overworked and overtired, and to many pupils who hail the long summer vacation as their only time of real freedom, this suggestion may seem unwelcome, but to the true nature-lover it will come as an echo of his daily experience.

In the minds of most people, the vacation idea and nature are inseparably woven together. A vacation, it must be admitted, will never help some people to enjoy life in the true vacation spirit; but such a spirit, once developed, will bring everyone into that vital, inspired relation to daily life which is the end and essence of what is meant by "a real vacation."

The substance of nature-study sums up into exactly this to put people into the vacation spirit under all circumstances, at all seasons, and in all places. What nature has to teach "under the open sky" is the secret of the vacation spirit. City or country, school or vacation-time make little difference. What everyone wants and needs is *the vacation spirit all the time*, which is only a different way of expressing the underlying principle of the concept that the greatest accomplishment is made by the person who does not sharply separate work and play.

If our Audubon Societies have one special mission above all others, it is to teach people how to cultivate this spirit. It is set down in print that Audubon Societies have been formed for the better protection of birds; but those who once learn to live with and in nature will never molest the birds, nor destroy trees, nor become nature-vandals of any kind.

There is no more practical work to take up than to further every means for bringing people into touch with nature. School gardens, back-yard and front-yard gardens, public playgrounds, the reclamation of waste or worse than waste land—the noxious dumping-heaps of both city and country—the discovery, conservation and utilization of nature to the smallest fraction, all come within the scope of this undertaking, and are practical means to the desired end.

Whatever the means and wherever the opportunity, teach the children how to work as they play, and grown-ups to play as they work, and let Nature come to the rescue of our strenuous lives with the elixir of the true vacation spirit.—A. H. W.

FOR TEACHERS AND PUPILS

Exercise IV. Summer Neighbors, continued

Correlated Studies: Geography and Arithmetic

Taking up the Order of Perching Birds, which far exceeds any other order in the number of species which it contains, we find that to it belong the majority of all land-birds. By following the numerical scheme outlined in Exercise III, we may see at a glance the relative size of the families that make up this large group.

ORDER XVII.—PERCHING BIRDS.

[As represented in North America, A. O. U. Check-List, 1910.]

Number of species	Name of family	No. of genera	No. of species	No. of sub-species
<i>Suborder I—Clamatores or Songless Birds</i>				
[Cotinga]	1. Cotingas.....	1	2	
Kingbird.....	2. Flycatchers.....	11	30	22
<i>Suborder II—Oscines or Singing Birds</i>				
Horned Lark.....	3. Larks.....	2	2	14
Crow.....	4. Crows, Jays, Ravens and Magpies.....	8	23	30
Starling.....	5. Starlings.....	1	1	
Cowbird.....	6. Blackbirds, Orioles, Grackles, etc.....	10	19	27
Song Sparrow.....	7. Grosbeaks, Finches, Sparrows, etc.....	37	91	150
Scarlet Tanager.....	8. Tanagers.....	1	4	2
Barn Swallow.....	9. Swallows.....	9	13	8
Cedar Waxwing.....	10. Waxwings.....	1	2	
[Phainopepla].....	11. Silky Flycatchers.....	1	1	
Northern Shrike.....	12. Shrikes.....	1	2	5
Red-eyed Vireo.....	13. Vireos.....	3	12	20
[Bahama Honey-Creeper].....	14. Honey-Creepers.....	1	1	
Redstart.....	15. Wood Warblers.....	16	55	35
(Pipit).....	16. Wagtails.....	3	7	2
(Dipper).....	17. Dippers.....	1	1	2
Brown Thrasher.....	18. Thrashers, Mockingbirds, etc.....	4	11	10
House Wren.....	19. Wrens.....	9	14	30
Brown Creeper.....	20. Creepers.....	1	1	6
(White-breasted Nut-hatch).....	21. Nuthatches.....	1	4	7
(Chickadee).....	22. Chickadee.....	4	15	28
(Wren-Tit).....	23. Wren-Tits.....	1	1	4
Ruby-crowned Kinglet.....	24. Kinglets, Gnatcatchers, etc.....	3	6	7
Robin.....	25. Thrushes, Robins, Bluebirds, etc.....	8	15	27

NOTE.—Of the number of species and subspecies noted, the following are extralimital reckoned in the order of the families given, 1, 6, 0, 6, 0, 3, 9, 0, 3, 0, 0, 2, 0, 2, 3, 1, 1, 2, 1, 0, 2, 0, 0, 2.

The Cotingas, or "Chatterers," and the Honey-Creepers are subtropical, and therefore we may pass over them as families very sparingly represented in the extreme southern portion of the United States. The Cotingas are found from Southern Mexico to Argentina, but, of the hundred or more species in this family, only one enters our borders in Arizona, along the edge of Mexico. The Honey-Eaters, or "Quit-quits," as they are commonly called from their weak call-note, range from the Bahamas to the southeastern part of Brazil, the Andes in Bolivia, and the Antilles, as well as the Galapagos Islands. Only the Bahama Honey-Creeper has been once recorded from Indian Key, Florida.

The Flycatcher family numbers over three hundred and fifty species, all of which belong to the Western hemisphere, as do also the Tanagers, Vireos, Wood Warblers, Thrashers, Mockingbirds, Gnatcatchers, and the large Blackbird family. A comparatively small number of Flycatchers visit North America, although thirty species and twenty-two subspecies seem a goodly number. The Kingbird has an unusually extensive range throughout North and South America, breeding, as it does, from a line drawn through the southern part of British Columbia, Mackenzie, Keewatin, along northern Ontario, central Quebec and Newfoundland, down to central Oregon, northern New Mexico, central Texas and central Florida. This species occasionally strays as far north as Greenland, and, in migration, as far east as Cuba. Being insectivorous, like all the Flycatchers, it is a migratory species, and in winter, we may look for it from southern Mexico as far south as Bolivia, Peru, British Guiana and Colombia. What is probably its usual route in migration, judging from the foregoing statements?

The Larks may be called an Old World family, for we have only one species with its numerous subspecies in America. It is true that the Skylark has been introduced into the United States and Hawaii, but it has not increased much, if any, nor has it spread over the country as the English Sparrow has done, and as the Starling bids fair to do. The Horned or Shore Lark ranges over North America, Europe and Asia as far as the northern parts of South America and Africa. The various subspecies found on our continent are scattered in their distribution, forming a series of Larks, all of one species, but differing somewhat in coloration, and restricted to particular ranges. The Horned Lark proper is found in eastern North America, the Pallid Horned Lark in northwestern North America; the Prairie Horned Lark, once a bird of the prairies of the West, has made its way to the northeastern United States and Canada; the Desert Horned Lark inhabits the Great Plains and Great Basin of the interior, the Texan form, a part of the coast of Texas and Tamaulipas, and so on, through the California, Ruddy, Streaked, Scorched, Dusky, Sonora, Hoyt's, Montezuma, and Island Horned Larks. The Larks are ground-birds, and are noticeable for the fact, that, unlike most passerine birds, they *run* instead of hop. In winter, they make their way to the southern

or eastern parts of their respective ranges, or, in certain instances, remain resident throughout the year.

Of the Crow family, which numbers some two hundred species, only 23 species and 30 subspecies are found in North America. It is difficult to choose between the Jays and Crows, both are so well known; but, since there are 25 species and subspecies of Jays and only 5 of Crows, the common Crow, welcomed by many for his cheery *caw caw*, distrusted by others when he visits the freshly sown fields in spring, will best serve our purpose. The Crow belongs to eastern North America, but there are also the Western Crow, the Northwestern Crow, the Florida Crow, and along the Atlantic coast and eastern waterways, the Fish Crow. Wintering from the northern United States southward, the Crow breeds as far north as southern Mackenzie, central Keewatin, Quebec, and along the Atlantic coast to Newfoundland, and as far south as southern Texas and the Gulf coast, with the exception of Florida.

The Starlings are properly inhabitants of the Old World, where they are quite generally distributed. Some of this numerous family are semi-arboreal in habit, and are known as Tree Starlings; while others are mostly terrestrial, running and walking easily. To this latter group belongs the common Starling, which, in 1890, was first introduced into America. Before this date, it had been known as an accidental wanderer to Greenland. At present, its range in the New World is restricted to a small but constantly widening area around New York, Long Island, southern New England, and the eastern edge of Pennsylvania. The Starling is by habit migratory, but it may be called a short-distance migrant, since its range does not extend far south, and individuals may be resident. In this country, its seasonal movements have not been accurately determined. It will be interesting to see how far it will go from its breeding range, or whether it will remain practically resident. In its native habitat, this species is found throughout western and central Europe, wintering south to Africa.

Closely related to the Starlings is the large and rather mixed family of Blackbirds, Grackles, Meadowlarks, Orioles, and the Bobolink. The Orioles are sometimes called the "American Starlings," but should never be confused with the Old World Starlings, since they are among our most attractive and beneficial birds. Quite different in habit from any other perching bird, the Cowbird has the distinction of being our only feathered parasite. In Europe the common Cuckoo follows this despicable habit of laying its eggs in the nests of other birds. The Cowbird is economically useful so far as its food habits are concerned, but it prevents the young of those birds upon whom it foists its eggs, from being reared in many instances. It usually selects species smaller than itself for foster-parents to its offspring. The Cowbird is quite generally distributed throughout North America, the Gulf Coast and central Mexico marking its southern limit in winter, and southern British Columbia, Keewatin,

Ontario, Quebec and New Brunswick its northern limit during the breeding season.

Family 7 is by far the largest in this Order, and it might be well to learn its scientific name, *Fringillidæ*, since the adjective fringilline is frequently applied to the species of this group. A study of the bills of the fringilline birds is most instructive, but remember that, however much the bill of one species may differ from that of another, the fringilline bill is always a seed-cracking bill, for the *Fringillidæ* is made up of seed-eating birds. Grosbeaks, Finches, Crossbills, Redpolls, Snow Buntings, Longspurs, Sparrows of many kinds, Juncos, Towhees, the Cardinals and Pyrrhuloxias, Buntings, Seedeaters, Grassquits and the Dickcissel represent this extremely valuable family in America. No single species of the six hundred or more which are included in the *Fringillidæ* is more familiar in this country than the Song Sparrow. Seacoast and mountain, desert and marsh, open clearings, fields, and even roadsides, claim some form of this widely distributed Sparrow as a breeding or resident species.

No fewer than twenty subspecies are known, differing considerably in size, degree of coloration and song. From Alaska, Prince William Sound, southern Mackenzie around Great Slave Lake, central Keewatin, northern Ontario, central Quebec and Cape Breton Island, down through mountains, coasts and prairies to the Gulf of Mexico, this sprightly bird is found. In winter the eastern form is found from about the latitude of the Middle States to the Gulf Coast.

Of the three hundred and fifty species of Tanagers which belong exclusively to the western hemisphere, only four species and two subspecies visit North America. The brilliant Scarlet Tanager, or "Firebird," as it is sometimes called, ranges throughout eastern North America, from a line drawn through southeastern Saskatchewan, southern Quebec to Nova Scotia, as far as northern South America. This species regularly migrates through Cuba, Jamaica and Yucatan, although it sometimes strays to the Bahamas and Lesser Antilles on the east, or to Wyoming and Colorado on the west. Much remains to be learned about this large and little-known family, which for the most part is confined to the tropics. If all Tanagers are as useful, attractive and attentive to their young as the Scarlet Tanager, we may well wish that more representatives of this group visited temperate latitudes. The Scarlet Tanager is an excellent example of the changes in color which appear during the period of molting.

The Barn Swallow belongs to a family which is distributed throughout the world. Upon first sight, a Swallow, particularly the fork-tailed Barn Swallow, seems quite unlike other perching birds. The long, pointed wings, large mouth, small, weak bill and feet, suggest at once marked adaptation to life in the air. It is not strange that Swifts are often confused with Swallows because of their similarity in habit and appearance. Careful observation,

however, soon teaches the marked differences between these aerial birds. Throughout North America, the familiar Barn Swallow is found breeding quite generally, from northwestern Alaska and the Great Bear Lake region to southern California, and west of 97° in southern Texas, also to northern Arkansas and North Carolina down the Atlantic coast, and even in Mexico as far as Jalisco and Tepic. It migrates along the Bahamas and West Indies, wintering from southern Mexico to Brazil, northern Argentina, and central Chile. This Swallow wanders by accident to Greenland, the Bermudas, and the Galapagos Islands.

One of the smallest of the passerine families, the Waxwings, nevertheless, have a wide distribution in the northern hemisphere. Noted for their beauty, but possessed of small vocal ability, these charming birds wander about in small flocks, feeding upon wild fruits and insects, and nesting late in the breeding-season. The Cedar Waxwing is found in nearly all parts of North America, its northern breeding limit extending from British Columbia to Cape Breton Island, and its most southerly winter quarters from Cuba to Panama and Mexico. It may be called resident throughout most of the United States, except in the southern part.

In the southwestern portion of the United States and in the Valley of Mexico, there is found a small, crested, shining black bird called the Phainopepla, which is closely related to the Waxwings. It is the only representative of the "Silky Flycatchers" in our country.

The Shrikes, or "Butcher-birds," are largely Old World birds, only two of the two hundred or more species being found in America. Five subspecies of the Loggerhead Shrike are known, but the larger Northern Shrike has only one form, and this belongs to the northern part of our continent as its name shows. During the breeding season, this Shrike is found from the southern part of Quebec and Ontario, central Saskatchewan, and the base of the great Alaskan peninsula northward. In winter, it goes only as far south as central California, Arizona, New Mexico, Texas, Kentucky and Virginia. The Northern Shrike is carnivorous by habit, feeding chiefly on mice and killing young birds, which it leaves impaled upon sharp twigs of trees. Insects form a part of its diet, so that, like other Shrikes, it is known as a beneficial bird.

There are some fifty species of Vireos, only twelve of which visit North America. Beautiful in plumage, notable for their full, voluble songs and shapely nests, as well as for their beneficial food habits, it is strange that this family is not better known to the ordinary observer. The Red-eyed Vireo, singing persistently as it feeds, is one of our commonest summer neighbors. It has a very extensive range, breeding from British Columbia and southern Mackenzie across the continent to Cape Breton Island, down through the United States, east of the Rocky Mountains, even into Mexico. It winters in South America and in migration has been known to stray to Nevada, Greenland, and across the ocean to England.

Of all of our bird families, none is more distinctively North American than that of the Wood Warblers. There are one hundred or more species of this exquisite group, with a large number of which we may become familiar, if we set to work to study their habits, plumage, nesting-sites and songs systematically. The Yellow Warbler or "Summer Yellow-bird" is probably as generally known as the Redstart, and even more widely distributed, but who that has ever watched the tiny flaming, "flycatching" Redstart can mistake its movements or plumage, unless, indeed, the female bewilders the eye and befogs the mind by her different but hardly less conspicuous colors and rapid actions! British Columbia, central Mackenzie, southern Keewatin and Quebec, with Newfoundland on the extreme east, mark the northern limits of the Redstart. It rarely breeds below the latitude of 35° in southeastern United States, while, in the west, a line drawn from Arkansas, central Oklahoma, Colorado, northern Utah and Washington would mark roughly its southern limits. Insectivorous, like all of this family, the Redstart migrates in winter to the West Indies, and from the latitude of Puebla, Mexico, to Ecuador and British Guiana.

The Pipit and Dipper are excluded from our list of thirty representative species, together with the Wren-tits, because they are either very restricted in distribution or not commonly known. The Pipit, or "Titlark," is mostly a migrant in the United States, but winters in some parts of temperate latitudes, as well as in Mexico and Central America. It breeds in subarctic regions and high up in the Rocky Mountains.

The Dipper, or "Water Ouzel," is a resident species in the mountains of the West, a rarely attractive acquaintance to make, for those who are so fortunate as to discover its haunts.

The Wren-tit is a Pacific-coast species, its four subspecies extending from Oregon to the northern part of Lower California, and east only so far as the interior of California proper.

Until recently, the Thrashers, Catbirds and Mockingbirds were placed in the same family with the Wrens, but, though closely related, they clearly belong to a separate family. The songs, habits and distribution of this group are all interesting. Although the Mockingbird is the most famous species of the family, the Brown Thrasher and its kind are more widely known. This long-tailed, long-billed "Brown Thrush" inhabits all of America east of the Rocky Mountains, from Colorado, Wyoming, Montana and southern Alberta in the west to southern Manitoba, Ontario, Quebec and northern Maine in the east. In winter, it shifts down to the Gulf Coast, occasionally straying to Arizona and Europe.

Of the one hundred and fifty species of Wrens, scarcely a dozen are known outside of America. The Wrens are small, mouselike creatures of dull plumage, exceptionally pleasing by reason of their rapid, bubbling songs, and difficult to watch as they play at hide and seek around stumps, old fences.

crevices and brush tangles. The House Wren of eastern North America, who has a counterpart, the Western House Wren, breeds from not far north of the United States south to Kentucky and Virginia, wintering in eastern Texas, Tamaulipas, and about the South Atlantic and Gulf States.

There are only twelve species of Creepers known, and of these the Brown Creeper with its six subspecies is the only one of this family that occurs in America. Breeding from the northern United States up through southern Quebec to Newfoundland, the Brown Creeper is a familiar migrant through our latitude. It does not go further south than northern Florida and central Texas. It is not a song bird with us, uttering only a low, lisping note, as it searches unremittingly on the trunks of trees for hidden larvæ and eggs of injurious insects. Study the Brown Creeper, the Nuthatches, Downy Woodpecker and Black and White Creeper, learning to distinguish each by note, movements and shape.

The Nuthatches and Chickadees have been grouped in the same family until very recently, but it is perhaps better to separate them, since they are quite different in many respects. Both are resident species, for the most part. The White-breasted Nuthatch occurs east of the Great Plains, and the Chickadee belongs also to eastern North America.

Next to the tiny Hummingbirds in size, the Kinglets, along with the Gnatcatchers and Kennicott's Willow Warbler, an Old World species which crosses into Alaska from Asia, are often confused with our Wood Warblers. The Ruby-crowned Kinglet comes up from the tableland of Mexico and Guatemala as a spring migrant, to breed north of the United States or along mountain ranges while the Golden-crowned Kinglet visits us in winter, coming down from its boreal breeding-area. Fine and exquisite in every particular, the Kinglets are delightful bird-neighbors to have. The Ruby-crown has a remarkably beautiful song, and easily shares the honors in this respect with the Winter Wren.

Last, but far from least, in this very large order of birds, is the family of Solitaires, Thrushes, Robins, Wheateaters, Bluethroats and Bluebirds. Of all of our feathered friends, the familiar Robin is doubtless the best known and best loved. We have a Western Robin, a Southern Robin, and a San Lucas Robin, besides the common Robin. Draw a line from the tree-limit in northwestern Alaska, northern Mackenzie, central Keewatin, northern Ungava and Newfoundland, and a second one from Cook Inlet, central Alberta, southeastern Wyoming and Kansas, through the Middle States to New Jersey, and down the Alleghanies to North Carolina. Between these two lines the Robin breeds. In winter, a few Robins remain in northern United States, but, for the most part, this species moves down toward the Gulf Coast, and as far as Nuevo Leon, Mexico. It is considered a "stray" in Cuba and Bermuda.

From this hasty survey of the twenty-five families of passerine birds

belonging to North America, you may possibly gain a clearer idea of the relationship and distribution of this great order. Do not forget that in the Old World there are many other kinds of perching birds which are not included in this list.—A. H. W.

Suggestion: Add up the number of families, genera, species and subspecies in this order, that are found in North America.

References: Chapman: Handbook of Birds of Eastern North America.

Bailey: Handbook of Birds of Western North America.

The A. O. U. Check-List of North American Birds, 3d ed.

Chapman: The Warblers.

Correction: In the outline presented in the preceding issue of BIRD-LORE, page 179, substitute 25 for 24 in the column giving the number of families of perching birds.

FROM YOUNG OBSERVERS

Notes on the Purple Martin

In the spring of 1911, we had planned to build a bird-box for the accommodation of the Purple Martin, and to have it up before any Martin prospectors had returned, but the weather was so bad during the first half of April that one could not work out-of-doors, and it was April 25 before the box was ready to be put in position.

The first Martin was seen on April 10, an adult male, and, in spite of the unfavorable weather, quite a number of Martins had returned to the other bird-houses in town by the 18th.

The house built by us was erected on April 25. It contained twenty rooms. While it was being put in position, a male Martin came and inspected several rooms, but did not remain long.

It was fully a week later before other prospectors came, and we had already begun to think that they had found suitable nesting-places elsewhere. This was not the case, however, as they began to come to our house regularly and on May 6 several of them were carrying nest material. From this date until July 1, nest-building was carried on at different times. At the time these operations stopped, the box held fifteen nests.

At noon on May 19, I saw my first immature bird, a male. On the 22d others were seen on and about the box.

Although I feel sure that eggs were deposited in most of the nests, our Martins did not all bring out broods successfully. On inspecting the nest rooms after the young had left the house, nine dead young were found.

The first young left the box on July 14, and the last on August 13. After the young had left the box, the birds returned to it only occasionally.

On August 22, the first signs of preparation for the fall migration were witnessed, when several hundred Martins collected upon the roof of an elevator.

On the evening of September 11, between 6.30 and 7.30, hundreds of Martins passed overhead, northward bound. They came in very irregular numbers, sometimes only a few appearing, and again great numbers rushed by on all sides. Some flew very low and others high, but they were all going in the same direction. They were probably headed for some roost, where



A MARTIN COLONY

they congregated before their departure. I made no count as to their numbers, but feel safe to say that there were at least several thousand of them.

The last Martins of the year were seen on September 21. This is an unusually late date for their departure from this locality. In the fall of 1910 they were last seen on September 12.

QUESTION.—Can you tell me why the Martins remain with us so much later in the fall than they do at points farther south?—HARRY B. LOGAN, JR. (age, 16), *Royalton, Minn.*

[It is encouraging to learn that Martins are so numerous in certain localities, when they are so rare or entirely absent in many places. Undoubtedly, the erection of more Martin-houses would aid in preventing the decrease of this friendly and valuable species.

By April 29, 1912, the house represented in the accompanying illustration contained eight pairs of Martins, a good beginning for the present season.

Just why this colony of Martins, with those of the adjoining neighborhood and from points presumably farther north, should remain later in the fall than colonies to the south, it is impossible to say without a closer study of local conditions, and a list of dates of the first and last arrivals of this species along the Mississippi Valley route of migration during both spring and fall. It is probable that, as in the case of some other species, individuals or colonies overtake or outspeed others in making the annual jour-

ney north and south. Favorable local weather and food conditions might easily delay departure from any given point, while those individuals which nest farthest south may make fewer halts, and be delayed less by the flocking of colonies coming down from the north, than the Martins about Royalton, Minnesota, which doubtless receive large accessions to their numbers from colonies breeding much farther north in British America. The breeding-range of this species is very extensive, covering much of the territory from the Gulf Coast to west central Alberta, eastward to Nova Scotia. Its winter home is in Brazil, and, since its range does not include the Pacific coast, the Mississippi valley is its main highway along the interior.—A. H. W.]

FROM ADULT OBSERVERS

"Pete"

The Robin I speak of seemed deserted by his parents, and would soon have fallen a prey to cats. For several nights, I put him in a canary-cage in the cellar, and in the daytime, under a coop of wire-netting in the yard.

With the help of various interested people, I procured enough angleworms for him for a time; but, as the weather was very dry, it was difficult, and later I gave him much fruit. He became very tame and, when let out, would light on one's head or lap.

One night before dark, he decided that he preferred a twig on a tree to a perch in a canary-cage, and remained out all night. After that, I usually left him outdoors at night, but had to get around very early each morning for fear a cat would get him. During the day, I kept him in his outdoor coop most of the time, unless someone had time to watch him.

Nearly every morning he would come to my window-sill for food, but before many days I found he was awake ahead of me



A LITTLE FRIEND FEEDING "PETE"

and feeding on the ground. One afternoon, when several of us were seated on the porch, I let my bird out, and he exhibited his capacity for flies. He ate dozens and dozens, one after another, as I killed or maimed them for him.

After he began to fly to the ground mornings, before coming to my window, I grew much alarmed for his safety, and decided he must be put out of the reach of cats until he learned the wild ways of his fellows. So, one morning, I put him in the canary-cage and drove several miles to a mountain stream. Here elderberries grew thickly and the air was full of insects. I watched my little friend, of whom I had grown very fond. He soon became oblivious of me and began to feast on the berries. Had I left him about the yard, he would probably have shared the pitiful fate of the little Grosbeak.—MARY PIERSON ALLEN, *Hackettstown, N. J.*

[The Grosbeak referred to is the one described in BIRD-LORE, Vol. XIII, No. 6, p. 318, under the title of 'Some Experiences with a Bird Nursery.' The happier fate of 'Pete' suggests the wisdom of training birds reared by hand for life in the open. However, there are many enemies besides cats, as well as many dangers which threaten the life of any bird, whether captive or free. To study more closely into all the conditions which make for the health and safety of birds, and particularly of immature birds, is the problem of the human foster-parent.—A. H. W.]



A REDSTART FRIEND

Photographed by H. W. Osgood, Pittsfield, Mass.

THE YELLOW-HEADED BLACKBIRD

By THOMAS S. ROBERTS

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 57

Range The Yellow-headed Blackbird is preëminently a native of the Great Plains, and, although in some parts of its range it invades regions not strictly prairie, it belongs by right to the vast treeless plains of the interior and the sparsely wooded areas immediately adjoining on the east and west. Over all this region it ranges, breeding from the extreme northern part of Mexico in the south to southern British Columbia, the Saskatchewan and Manitoba in the north. East and west it occurs regularly as a summer resident, from Wisconsin, Illinois, northwestern Indiana and western Louisiana to the valleys of the Pacific Coast States. It winters throughout the extreme southern portion of its United States range and on the plateaus of Central Mexico. Farther east in the United States it is but a rare wanderer.

Haunts There is one invariable condition necessary to induce it to establish a summer residence, and that is an abundant and permanent water-supply, and associated with this must be just the kind of vegetation that is suited to its rather particular tastes. Preference is given usually to a swamp or slough that is very wet and having more or less open water; never meadows or marshes that are simply damp and subject to drying out.

The tule beds of the valleys of the Rockies, the quill-reed brakes of the North, and the flag swamps of the South are alike acceptable. Wherever the Yellow-head breeds it congregates in colonies, and these assemblages are often of vast proportions. It is very loyal to its home-site and returns year after year, even though the surroundings undergo great and uncongenial changes, deserting it only with the drying up of the marsh. The Yellow-head is very closely restricted to its special nesting haunts, and as the members of each colony go in the spring directly to their particular rendezvous, and wander but a little way into the surrounding country until after the completion of the breeding period, they are easily overlooked if their nesting sloughs are not numerous or their homes be not actually invaded.

Migration In the northward spring movement, the vanguard of the Yellow-heads that are to breed in Canada reach the International Boundary about May 1, the males preceding the females by a few days. In Minnesota, where the writer's entire experience with this bird has been gained, stragglers enter the southern part of the state



YELLOW-HEADED BLACKBIRD

Order—PASSERES

Family—ICTERIDÆ

Genus—XANTHOCEPHALUS

Species—XANTHOCEPHALUS

National Association of Audubon Societies

Educational Leaflet No. 57

about the middle of April, but it is not until the very last of that month or early in May that they become numerous.

In this region they breed almost exclusively in the dense growth of quill-reeds (*Phragmites*) that fills or encircles many of the sloughs and shallow lakes of the prairie and semi-prairie portions of the state. Occasionally spring freshets or other disturbances may drive them to place their nests among bulrushes (*Scirpus*) in upland sloughs or more rarely still, in willows and bushes adjacent to open water. Nest-building is usually begun in central Minnesota about the middle of May and continues until well into June. The writer has found young birds near Minneapolis hatched as early as May 28, and has watched the building of nests at Heron Lake in southwestern Minnesota as late as June 20, when many young were already awing. It seems probable, however, that only one brood is raised in a season, this great variation in the nesting-time being explainable by the depredations of various small animals which devour the eggs and young, and by severe elemental disturbances.

The examination of many hundreds of nests over a long period of time and a detailed study of a single colony* throughout the entire breeding season furnish the data for the following summary of the chief features of the nesting of the Yellow-head:

The female builds the nest and incubates the eggs without any assistance from the male.

The male assists in the care of the young, but only to a limited extent and chiefly after they leave the nest.

The body of the nest is constructed of wet material collected from the water nearby. This is woven about the stems of the reeds, two or three feet above the water, and its drying and contracting fixes the nest securely in position.

The lining consists of pieces of broad, dry reed-leaves, the rim of the nest being often finished off with the fine branches of the plume-like fruiting tops of the reeds, forming a sort of canopy over the somewhat constricted entrance.

The typical finished nest is a firm, inverted, cone-shaped basket-like affair, suspended among the rigid stems of last year's reeds, only exceptionally among new growth. The height is usually eight to ten inches, rarely only four or as much as twelve inches.

A skillful, industrious bird will build one of these large, beautifully woven and lined nests all complete in two to four days. When it is considered that a single bird has not only to collect but skillfully to manipulate all this large mass of material, it is a surprising matter to see these bulky nests spring up almost over night.

The eggs in a set are three to five, usually four. They are laid one each day, the first egg one to five days after the completion of the nest, depending

* For fuller details, see 'Auk,' XXVI, 1909, pp. 371-389, 10 plates, 24 photographs.

apparently upon the time it takes the nest to dry out. All the eggs of a set are alike in coloration and shape, but there is considerable variation in different sets. The outline varies from almost elliptical to a pronounced ovate. The measurements vary from 1.12 inches to .94 inches in length by .76 to .64 of an inch in breadth. The shell is smooth and glossy. The ground color of the eggs varies from a soiled grayish white in some sets to a pale olive-white in others, and in rare instances is of a faint pink-lilac hue. When these tints correspond, as is usually the case, to similar shades in the markings, there result eggs of a general dull gray, olive or pink-lilac hue. The markings vary from a fine close speckling, almost uniform over the entire egg, to large blotches scattered at the smaller end and becoming confluent at the larger end. Most of the eggs present very fine and inconspicuous irregular tracings and spots of black or dark brown about the larger end, suggesting the more pronounced zigzags on the eggs of other Blackbirds and Orioles.

The usual period of incubation is ten days.

The young remain in the nest about twelve days, when they begin a precarious life in the swaying reed tops, where they are cared for for some days by both parents. The curiously variegated, generally buffy-toned plumage of the young birds blends well with their surroundings at this time and, as they are indisposed to move, quite effectively conceals them.

The nesting season over, old and young leave the sloughs and marshes and, congregating in straggling flocks, sometimes accompanied by Redwings and Grackles, wander over the upland for a short time before departing for the South. They rarely assemble in the North in the large compact flocks so characteristic of the Redwing and the Rusty. Their southward movement begins early, and they have largely left the northern part of their range by the first of September. Stragglers, however, may occasionally be found even until snowfall. Throughout their winter range in the southern United States they roam about in flocks, feeding familiarly about cattle ranches, farms and the outskirts of towns and villages, leading a sort of Cowbird existence.

The song of the male Yellow-head, if song it may be called, is a most remarkable, unmusical and unbirdlike effort. At a time of the year when most other birds are singing finished nuptial songs, however humble, this fine fellow, perched aloft on a cluster of swaying reed-stems, is straining every nerve in an attempt that results, after a few harsh preliminary, but fairly promising notes, in a seeming painful choking spell, that terminates in a long-drawn rasping squeal that is nothing short of harrowing. It has always seemed as though some day a Yellow-head would be found who could sing the song that they are all trying so hard to render, but thus far not a single note of the dreadful discord has been improved upon, and it always ends in the same disappointing failure. The rasping, scraping sounds are accompanied by a most intense bodily effort, as is evidenced by the widely spread tail, swollen throat, upturned head and twisted neck.

Even the ordinary call-note is a hoarse rattling croak that suggests a chronic sore throat. The voice of the female is less harsh, and I have never heard it utter the long squeal of the male.

As an economic factor, the Yellow-headed Blackbird plays about the same role as the Redwing; but the fact that it is in the aggregate much less numerous and much more restricted in its general range renders it of less importance than the latter enormously abundant and widely distributed species. The whole Blackbird tribe is more or less under a ban, viewed from the agriculturist's standpoint, and the Yellow-head gets his share of criticism. He is a large, sturdy, and voracious fellow, and locally his cohorts are often legion, so that the food-levies he makes upon the land in which he dwells are by no means trifling.

While wintering in the southern part of its range, the Yellow-head wanders over the country in quest of scattered and wild grain, weed seeds, various insects, grubs and worms, and at this time does little or no harm to anyone.

But with the coming of spring and the reoccupancy of the northern portions of their range, they congregate at their nesting-haunts and for a time supplement their insect and waste-seed diet by extensive stealings from the various grains being planted by the neighboring farmers. Wheat, oats, flax, corn, and, in fact, everything receives a share of their attention at this time. Sprouting corn is pulled up by the roots in order to get at the grain below, and in fields near the sloughs it is only by replanting the despoiled hills and covering with manure that a crop can be started at all.* It is at this season that the Yellow-head and its associates—the Redwing and Grackle—come in for their first bitter denunciation by the plundered farmer. After the crops are well started, the Yellow-head once more returns to a diet that is more beneficial than injurious. During the 'breaking' season they, in company with a troop made up of Franklin's Rosy-gulls, Black Terns, Grackles and Cowbirds, may be found following every plow and greedily devouring the many angleworms and insects turned out. I have known them to consume large numbers of the white grub of the cockchafer in this way. Grasshoppers they eat at this time as well as all through the season, and this insect forms a large part of the food of the young. When the small grains begin to head and the corn is in the milk, then the Yellow-head again takes tribute from the farmer.

The published work of the U. S. Biological Survey on the food of the Yellow-headed Blackbird† is still incomplete, but so far as it has gone it would seem to indicate that, taking the whole year together, the good done by the Yellow-head rather overbalances the harm.

* Bailey, Annual Report of Department of Agriculture, 1887, pp. 428, 429.

† Beal. Food of the Bobolink, Blackbird, and Grackles. Bull. No. 13, U. S. Dept. Agriculture, 1900, pp. 30-33.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City

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Any person, club, school or company in sympathy with the objects of this Association may become a member, and all are welcome.

Classes of Membership in the National Association of Audubon Societies for the Protection of Wild Birds and Animals:

\$5.00 annually pays for a Sustaining Membership
\$100.00 paid at one time constitutes a Life Membership
\$1,000.00 constitutes a person a Patron
\$5,000.00 constitutes a person a Founder
\$25,000.00 constitutes a person a Benefactor

Audubon Work in Alaska

It is with great pleasure that we announce the inauguration of Audubon work in Alaska. A public-spirited member of the Association has recently subscribed \$5,000 for this purpose.

In its work there, the Association will have the active coöperation of the United States Biological Survey in the matter of extending protection to the breeding colonies of water-birds on the Government Reservations, and elsewhere on the Coast. In the schools, toward which the major part of our attention will be directed, we shall have the hearty support of the United States Bureau of Education. It is planned, during the coming year, to place in the hands of every pupil in the schools of Alaska literature in reference to the birds of that territory. An artist is now engaged in making drawings with which to illustrate the leaflets to be used.

Mr. G. Willett, of Los Angeles, recently sailed for Sitka, as the representative of this association. During the present summer he will serve as warden at the Saint Lazaria Bird Reservation and gather information regarding the bird life of that region. He will also make a report on various phases of the needs found existing in Alaska in reference to bird and game protection.

When one considers the rapidity with which many form of aquatic bird life

are disappearing from our country, the importance of bird protection in Alaska becomes quite apparent. Here is the summer home of innumerable birds which are mercilessly shot on their southern migrations. As this work unfolds, we shall expect to have some exceedingly interesting developments to report.—T. G. P.

The Late Captain Davis

Captain M. B. Davis, field agent for this Association in Texas, died at his home in Waco, on June 18, 1912. He had been exceedingly active ever since his appointment, in 1904, and by his death Texas loses a most valuable citizen, and the Audubon movement one of its most earnest and effective workers. Our readers may recall an extended account of his very remarkable career which was published in BIRD-LORE volume XII, 1910, p. 212. Captain Davis was sixty-six years of age on the 14th of last October, and had been active in bird- and game-protective matters many years before he became connected with the Association. President William Dutcher wrote him, a few years ago, that the President of the National Association of Audubon Societies must doff his hat to the grand old bird protectionist of Texas, as the one who had been longest in the field fighting the enemies of bird destruction. The following beautiful

and appropriate tribute to Captain Davis has been received from Hon. E. E. Kone, Agricultural Commissioner of the State of Texas.

"Some time prior to his death, Captain M. B. Davis was engaged in writing for the State Department of Agriculture a bulletin on 'The Birds of Texas,' which has been eagerly awaited by farmers, orchardists and others having an economic, and some of them a scientific and scholarly interest in the subject, who knew the author's special fitness for the task, and who expected the production to be a most serviceable and notable one.

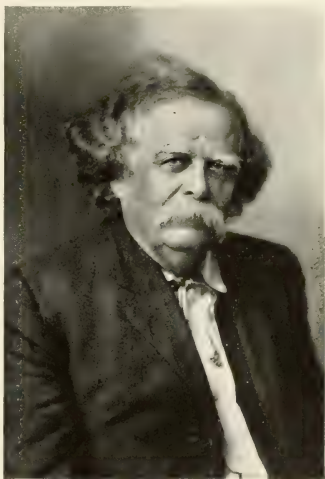
"While I received no information to that effect from Captain Davis, I am of the opinion that he either completed it or had constructed it to the point that it can be finished on the plan he formulated. Three months ago, having gathered all of the necessary data, he paid me a visit at Austin, and we discussed engravings to be used in illustrating the work, and decided on including a few colored plates (one as a frontispiece). This disposed of, our conversation naturally drifted to other topics—reminiscences of bygone days and bygone friends—friends still fighting bravely in the ranks in the battle of life for Texas and all high aspirations and ends, and in fact almost everything except politics, he enlivening his remarks with many apt allusions and bits of rare humor, kindly sarcasm, and, where they were deserved, words of praise. I was never more impressed with the length and breadth and depth of his learning, his elevated and unselfish character, and that in him this state had one of its noblest and most useful master-builders of its rising and expanding fortunes.

"He served Texas well. He thought little of self, and much of the welfare of others. Money-making occupied but small space in his mind—scarcely, if any, more than enough to make a living—but, living and dead, I regard him as one of the richest men I ever knew—opulent in good thoughts and good deeds, some of the harvests of which he lived to see garnered into the barns of many, and

which through coming years will yield ever more bounteous harvests, long after he, who scratched them as seed in the world-field shall have been forgotten.

"I and others shall sadly miss our dear old friend, and, with them, I feel the deepest sympathy for his bereaved family, whose loss is, indeed irreparable. The memory of him will linger long as a light on the paths of men."

Many editorials have appeared in Texas papers regarding the death of



CAPTAIN M. B. DAVIS

Captain Davis. A lengthy article of appreciation by the editor of the San Antonio Express, published June 22, closes with the statement: "He will be remembered as a friend to humanity and as an earnest worker for the uplift of the world, and his death will be deeply regretted by all who had an opportunity to know the service he did for humanity."

Captain Davis was a man of striking appearance, pronounced and agreeable personality, and was exceedingly effective in his public and private utterances. The writer has seldom known a man who

hated all forms of vice as did Captain Davis, or who fought them with more skill and perseverance. A great and powerful friend of America's wild life has fallen asleep.—T. G. P.

Junior Audubon Work in the South

The work of organizing Junior Audubon classes in the southern schools the past year has again proven a marked success. In Virginia, we were much aided in bringing the matter before the attention of the teachers by the active coöperation of the State Audubon Society. Aside from this, all the correspondence and the distribution of literature was carried on from the home office with the exception of the service performed by the field agents, Capt. M. B. Davis, of Texas, Miss Katherine H. Stuart, of Virginia, and Mr. James Henry Rice, Jr., of South Carolina. From the large number of enthusiastic letters received from teachers in all parts of the country, there is no indication of a lack of continued interest, and the campaign in the southern schools will be pushed the coming season with renewed vigor—thanks to the generous contributions of Mrs. Russell Sage. The following statement shows the states in which Audubon classes were organized during the past school year, also the number of classes in each state and the number of pupils enrolled. Each child paid a fee of ten cents and received in return ten of the Association's Educational Leaflets, outline drawings, and colored plates; also an Audubon button. To each teacher forming a class was sent a number of leaflets containing suggestions in regard to teaching about birds. Teachers also received a free subscription to *BIRD-LORE*.

State	No. of Classes	No. of Members
Alabama.....	32	632
Arkansas.....	3	45
Florida.....	5	100
Georgia.....	26	417
Kentucky.....	123	2,086
Louisiana.....	19	280
Carried forward	208	3,560

State	No. of Classes	No. of Members
Brought forward.....	208	3,560
Maryland.....	33	477
Mississippi.....	6	84
North Carolina.....	37	820
South Carolina.....	26	502
Oklahoma.....	4	46
Tennessee.....	60	1,445
Texas.....	6	131
Virginia.....	131	2,560
West Virginia.....	21	379
Totals.....	532	10,004

Junior Audubon Classes in the Northern Schools

Impressed with the work done in the southern schools in the matter of forming Junior Audubon classes last year, a friend of the Association contributed \$5,000 for inaugurating a similar movement in the schools of the Northern States. We were not in position to begin activities until after January 1, 1912. The State Audubon Societies of Massachusetts, Rhode Island, Pennsylvania, New Jersey, and Ohio, coöperated with the National Association in this undertaking. The plan which had proved so successful in the South was adopted for our work in the North. The success which attended this movement is best shown by the tabulated statement given below. We are glad to announce to the readers of *BIRD-LORE* that our benefactor, upon receiving recently the report of results accomplished, immediately contributed \$5,000 to carry forward the work for the school year 1912-1913, and has promised to do the same the succeeding year. A circular setting forth the details for organizing Audubon classes under this plan will be mailed upon request to any teacher, or other interested person, who is not already familiar with it.

State	No. of Classes	No. of Members
Colorado.....	1	18
Connecticut.....	3	52
Delaware.....	2	36
Illinois.....	17	388
Indiana.....	11	256
Iowa.....	4	74
Maine.....	29	539
Carried forward	67	1,363

State	No. of Classes	No. of Members
Brought forward.....	67	1,363
Massachusetts.....	91	1,617
Michigan.....	15	372
Minnesota.....	4	89
Missouri.....	1	10
New Hampshire.....	87	1,629
New Jersey.....	411	8,910
Ohio.....	130	2,092
Pennsylvania.....	113	2,349
Rhode Island.....	36	842
Vermont.....	1	12
Wisconsin.....	4	80
Totals.....	960	19,365

The Florida Audubon Society

Mr. and Mrs. L. F. Dommerich, the founders of the Florida Audubon Society, were both ardent lovers of nature. In their tour through the state, in 1900, previous to selecting Maitland as their winter home, they were forcibly struck with the alarming decrease of bird life, especially of the picturesque birds in their native haunts. They noticed the tourist gun doing its deadly work unmolesed from the decks of every steamer that plied the winding waters of the beautiful St. Johns River, robbing it of much of its charm. The seriousness of this matter was felt by them, and they deemed it their duty in some way to arrest the wanton destruction that sooner or later must result in serious trouble to those whose living depended on crops of fruit, grain, or vegetables. Acting on this thought, in March, 1900, a little gathering of friends and those interested in preserving to the state its native birds, was asked to meet at their home in Maitland, to organize what should be known as "The Florida Audubon Society," and whose object it should be to disseminate information respecting the economic value of birds to agriculture, to discourage the use of feather-wearing, except Ostrich, to establish bird-day exercises in the schools of the state, and to encourage the introduction of bird study in the schools.

The cause as stated met with the hearty approval of those present, and the society at once began its work. Its first president was Bishop Whipple of Minnesota,

and its secretary and treasurer Mrs. L. F. Dommerich. The first year the society met with a severe blow in the death of its founder, Mrs. L. F. Dommerich, whose untiring efforts had done so much, not only in organizing, but in introducing the society to the people of Florida; discouragements had been confidently expected, rebuffs were continually met. At the first annual meeting, it was found difficult to secure anyone to fill the office left vacant by the death of Mrs. Dommerich. It was therefore deemed wisest to separate the office; Mrs. L. P. Bronson accepted the position of treasurer, and Mrs. I. Vanderpool that of secretary, which offices they still hold. The third year, death again visited the society, and the choosing of a president to succeed Bishop Whipple became necessary. Mr. L. F. Dommerich, whose efforts for the welfare of the society had been unceasing, was unanimously chosen as president, which office he held till March, 1912, when he felt obliged by failing health and long enforced absence from the state to resign. His resignation was accepted with the utmost reluctance, and Dr. William Fremont Blackman, president of Rollins College, Winter Park, who had been acting president for the past year, was elected as president. The name and versatile talent of this prominent educator are so well known that it is needless to say more. The society has every cause for congratulation that Dr. Blackman, with the many calls upon his time from colleges, schools, and clubs could accept the presidency. Entering into the work with the energy that is one of his distinguishing characteristics, we feel sure our society will make marked progress and continue with greater interest in the lines laid down by our former president. We have now a large membership. Enrolled on our books are the names of the best people of our state. We now confidently hope we have succeeded in overcoming many of the prejudices that met us in the first year of our struggle. We annually send to schools, libraries and individuals thousands of



MR. L. F. DOMMERICH

Founder of the Florida State Audubon Society

While this article was in press, we received word of the death of Mr. Dommerich, which occurred in New York, on July 22.

leaflets whose pages are filled with accurate descriptions of birds; we supply teachers and schools applying for them with charts on which are correct representations, beautifully colored, of many familiar birds; and we endeavor to keep in touch with the children seeking to obtain this help by getting them to become pledge members, by which they promise or pledge themselves not to molest or harm birds, or their nests or eggs. We supply sheriffs and game wardens with cloth warnings, or with leaflets of the game-law, and in neat card form the laws have been condensed for posting in hotels, stations and post-offices. Any of these may be had by addressing the secretary of the Florida Audubon Society, at Maitland. We have this year added to our list perhaps our most valuable leaflet, *The Economic Value of Birds to the Farmer and Fruit Grower*. Its author is our President, William Fremont Blackman, Ph.D., LL. D. This should be read by every farmer and fruit grower in the state.

The following are the present officers of the society: William F. Blackman, President; Mrs. I. Vanderpool, Maitland, Secretary; Mrs. L. P. Bronson, Maitland, Treasurer; L. F. Dommerich, Maitland, Honorary President for life. Vice-Presidents: Miss Maria R. Audubon, Salem, New York; Pres. Lincoln Hulley, DeLand; Mrs. H. B. Whipple, Maitland; George N. Chamberlin, Daytona; Frank M. Chapman, New York; Wm. C. Comstock, Winter Park; Rt. Rev. Wm. C. Gray, D.D., Orlando; C. H. Morse, Winter Park; E. O. Painter, Jacksonville, Dr. T. S. Palmer, Washington, D. C.

Executive Committee: Mrs. Kingsmill Marrs, Maitland, chairman; Mrs. W. F. Blackman, Winter Park; George N. Chamberlain, Daytona; Mrs. E. E. Coulson, Bradentown; Mrs. George D. Dyer, Winter Park; Mrs. Algernon Haden, Orlando; Mrs. Marian A. McAdow, Punta Gorda; S. M. McIntyre, Altamonte Springs; Mrs. E. M. Massey, Maitland; Mrs. C. H. Morse, Winter Park; Dr. H. R. Mills, State Board of Health, Jacksonville; Mrs. Kirk Munroe, Cocanut Grove;

Prof. Henry Nehrling, Gotha; W. R. O'Neal, Orlando; W. C. Temple, Winter Park; Mrs. Katherine Tippetts, St. Petersburg; Judge T. Picton Warlow, Orlando.
—MRS. ISAAC VANDERPOOL, *Secretary*.

Indiana Audubon Society

The fifteenth annual meeting of the Indiana Audubon Society was held at Madison, Indiana, May 9, 10, 11, 1912. Dr. D. W. Dennis of Earlham College, the President, opened the first session, Thursday, in the High School. Music was furnished by the school children of grammar grades.

Friday morning, a bird tramp was taken, led by Dr. Dennis. At nine o'clock, talks on birds were given in the schools by William Watson Woollen, Miss Florence H. Howe, Mrs. Etta Wilson, and Miss Elizabeth Downhour.

At eleven o'clock, the society held a business meeting in the parlors of the Jefferson Hotel. A telegram of greetings was read from the National Association of Audubon Societies, also a letter from our former president, Mr. Amos W. Butler, who has spent the winter at New Smyrna, Florida. This was the first annual meeting of the society from which Mr. Butler has been absent, and his support and helpful suggestions were keenly missed. The society sent a letter of greetings to Mr. Butler, and a telegram of good will to the National Association.

Mrs. Etta Wilson, extension secretary, has done good work for the birds over the state, talking to women's clubs and children of public schools.

A motion was made and carried to provide a circulating library of a few bird books to be sent to the towns or cities having Junior Audubon Societies. These books may be kept two months. The women's clubs have been asked to give one day of their program to the study of birds this year.

Officers elected for the coming year: President, Dr. D. W. Dennis, Earlham College, Ind; First Vice-President, Hon. Joseph M. Cravens, Madison, Ind.;

Second Vice-President, Prof. Donaldson Bodine, Crawfordsville, Ind.; Secretary. Miss Elizabeth Downhour, Indianapolis, Ind.; Extension Secretary, Mrs. Etta Wilson, Indianapolis, Ind.; Treasurer, William Watson Woollen, Indianapolis, Ind.

Executive Committee: Miss Florence H. Howe, Indianapolis, Chairman; Mr. Alden Hadley, Monrovia, Ind.; Miss Elizabeth M. Garber, Madison, Ind.; Mr. Edward Barrett, Indianapolis, Ind.; Mr. Amos W. Butler, Indianapolis, Associate member of National Audubon Societies.

The evening meeting was held in an old church at Hanover. Talks were made by Dr. Millis, President of Hanover, Dr. Dennis, and Rev. R. F. Souter. Music was furnished by a glee club.

Resolutions of thanks to the people of Madison and Hanover were read by Mr. Barrett and seconded by Mr. Woollen. The meeting then adjourned, to meet at one of the lakes in Northern Indiana next spring, where a good opportunity will be afforded to study the water birds. —ELIZABETH DOWNHOUR, *Secretary*.

Mr. Jefferson Butler's Field Work

Many of the readers of BIRD-LORE probably do not have a clear idea as to the character of the detail work in which the field agents of this Association are engaged. The following, taken from the report of Mr. Jefferson Butler, field agent for the Association in Michigan, shows something of his activities during the three months ending July 1, and may be of interest to our members and others.

"On April 2, I attended the meeting of the Michigan Association of Sportsmen at Saginaw; April 3, I spoke before the College Club of Detroit; April 4, before a Forestry Conference; April 5, spoke at Lansing; April 6, took teachers for outing; April 10, had a conference at Grosse Pointe; April 12, went to Washington, D. C., where I spoke at the Cosmos Club on the Ford Bird Farm. While there, I conferred with a number of Congressmen

in regard to the bill protecting migratory birds. April 23, spoke at Conference regarding prizes for bird work in schools; April 24, addressed Church Club of boys at the Dearborn Conference regarding bird work; April 26, addressed Detroit Institute of Science on Audubon work; April 27, headed party on Bird-study outing; and April 30, attended a conference on bird protection, at Oakwood, Michigan. During April, I contributed to the New Thought Magazine on Audubon work, and to one of the Detroit newspapers.

In May, I took charge of a number of outings; May 3, Arbor and Bird Day, spoke at two schools in Detroit; May 4, spoke at Mt. Pleasant, Michigan, and took charge of an outing; May 6 and 7, took teachers and students on outings; May 10, spoke at Normal School to graduating class; May 11-12, took trip along Lake St. Clair and St. Clair River, to study water-birds, and addressed the North Channel Club on the preservation of game-birds and waders; May 15, conducted another teachers' outing, to study birds, and did the same again on May 18; May 19, went for an outing with Detroit Institute of Science along Detroit River, in study of conditions of water-birds; May 21, spoke before the Southern Society of Detroit on Audubon work; May 23 and 25, headed outing; May 29, spoke at outdoor conference; May 30, conducted outing from McGregor Institute. During May I published two articles on Audubon work.

"June 5, spoke in suburban school; June 6-7, went to Windiate and Clarkston, to investigate condition of water-birds in inland lakes, and to investigate destruction of Great Blue Heron colony; June 10, spoke at Delray school; June 11, addressed Alger school; June 12, spoke at Conservation Congress, Lansing, Michigan; June 13, spoke at Irving school; June 15, at Masonic Temple on bird protection; June 17, went to Bloomfield Hills to investigate killing of song-birds; June 18, presented prizes for best bird study at Nichols school, Detroit; June 21, went to Tecumseh, Canada, to investi-

gate killing of water-birds (Terns); June 22, headed boys' outing at Ford Farm; June 23, spoke at Presbyterian Church, Birmingham.

"Request for literature and lectures are so heavy as to make it impossible to keep up with them. I have promised twenty-seven persons or organizations to give talks in the future."—T. G. P.

Activity of the New Jersey Fish and Game Commission

One of the most earnest bird protectionists in the United States is Hon. Ernest Napier, President of the Board of Fish and Game Commissioners in the State of New Jersey. Ever since he came into office, less than two years ago, he has been prosecuting the work of enforcing the game laws of his state with an earnestness, impartiality, and good judgement which deserves the highest commendation. It has been especially gratifying to note the energy which the wardens of the state, working under the direction of the Commission, have displayed in enforcing the new Audubon Plumage Law. In reference to the results achieved, Mr. Napier writes us under date of July 1, 1912:

"Replying to your favor of June 24, in which you ask for a statement of the cases which our Commission has handled in the matter of enforcing the law against the sale of aigrettes in New Jersey, I beg to state that since the act was adopted by the Legislature of our state, April 15, 1911, five arrests have been made, in all of which judgment was given for the Board, and in only one case has an appeal been taken. As to the appeal case, the Board is confident that even if it is prosecuted, the result can only be the same as in the Justice's Court.

"The statement of our cases follow:

"March 2, 1912, Warden Harry M. Loveless vs. Mrs. A. J. Coffield, Milliner, Trenton, N. J.—Defendant paid a penalty of \$160.

"March 2, 1912, Warden Harry M. Loveless vs. Isaac Goldberg, Department

Store, Trenton, N. J.—Defendant paid a penalty of \$300.

"April 29, 1912, Warden Harry M. Loveless and Charles Morton vs. Mrs. Margaret Emlin, Milliner, Burlington, N. J.—Defendant paid a penalty of \$20.

"May 14, 1912, Warden John C. Reinbold vs. M. Himles, Milliner, Atlantic City, N. J.—Judgment obtained for \$200; case appealed.

"May 15, 1912, Warden John C. Reinbold vs. A. Halphin, Milliner, Atlantic City—Defendant paid a penalty of \$40.

"In all the above cases the Board confiscated the aigrettes on hand, with the exception of the Himles case, where a clerk prevented the warden from securing the aigrettes at the time of the arrest.

"I would further add that it is the intention of this Commission, and we stand as a unit in this matter, to follow up and prosecute to a finish every offender against this new plumage law. We have already sent and shall send from time to time detectives, both men and women, to visit department and millinery stores in different cities all over the state, and, where any violators are found, you can rest assured they will be severely punished.

"Assuring you of our most hearty coöperation in the noble efforts your society is making along this line, I remain, Very truly yours, (Signed) ERNEST NAPIER, President."

New Members

May 1, to July 1, 1912.

Life Members:

Mrs. James C. Greenway,
Mr. William G. Rockefeller,

New Contributor:

Irondequoit Fish and Game Association.

Sustaining Members:

Appold, Miss Bertha V.
Baldwin, Miss Sarah R.
Barnes, Miss Mary C.
Barton, Mrs. T. O.
Bigelow, Miss Elizabeth
Cary, Miss Kate
Chandler, Miss Ethel
Cleaves, Mr. Howard H.
Cochran, Mrs. G. F.
Crabtree, Miss Lotta M.

Sustaining Members, continued

Drew, Mrs. Maryette B.
 Garrett, Mrs. T. Harrison
 Goodwillie, Mrs. Mary B.
 Greene, Master Barry
 Greenway, Mr. G. Lauder
 Greenway, Jr., Mr. James C.
 Herman, F. J.
 Hessenbruch, Mrs. H.
 Hood, Mrs. J. N.
 Jackson, Mrs. E. E.
 Jackson, Mrs. T. G.
 Jenkins, Mrs. Joseph W.
 Jenkins, Miss L.
 Jenks, William
 McCulloch, Miss M. G. B.
 McGaw, Mr. and Mrs. George K.
 McQuesten, Mr. George E.
 Maund, Miss Margaret E.
 Miller, Mrs. G. Macculloch,
 Putnam, Mr. George P.
 Riggs, Mr. Austin Fox
 Roe, Miss Alice S.
 Reaney, Miss Rachel
 Russell, Mr. B. R.
 Spilman, Miss Anne C.
 Upson, Dr. H. S.
 von Riesen, Miss Susan
 Williams, Miss C. D.
 Wright, Jr., Mrs. S.

White Egret Protection

The nesting season of the White Egrets, which closed about July 1, was this year a very successful one in the colonies guarded by this Association.

There was some destruction of young birds and eggs by storms, but the fatalities were not great. So far as we are aware, only one attempt was made by plume-hunters to raid of any our colonies. In this case, the plunderers were promptly driven away by the warden in charge.

While a full report in regard to warden work will be made later on, it may not be amiss to call attention here to the recently located colony in Lee County, Florida, guarded by Warden B. Rhett Green, of Ft. Myers. This, the remnant of one of the splendid old-time rookeries, contained a population the past season of about 600 large Egrets, 1,000 Wood Ibises, 25 Roseate Spoonbills, 100 Ward's Herons, and about 20 pairs of the fast-disappearing Limpkin.



EGRET IN PROTECTED COLONY, ORANGE LAKE, FLORIDA
 Photographed by Warden O. E. Baynard

Probably our most interesting colony is the one heretofore mentioned, at Orange Lake, in Alachua County, Florida. Mr. O. E. Baynard, the warden, reports having counted here 254 occupied nests of the Snowy Egret, and 197 nests of the large Egret.

There have been some exceedingly interesting developments in the matter of Egret rookeries in South Carolina and Georgia, to which reference will be made in a later report.

The call issued by the Board of Directors for a sum of \$5,000, with which to prosecute the general work of Egret-protection in this country during 1912, continues to meet with liberal support. It will be noted, from the list given below, that about \$1,000 is yet needed to complete this amount most urgently needed.

Subscriptions to Egret Protection Fund

LIST OF SUBSCRIBERS

Amount previously reported . .	\$2,186 50
Abbott, Miss Marie M.	5 00
Agar, Mrs. John G.	2 00
Allen, Miss Marion B.	2 00
Albright, Mr. J. J.	5 00
Almy, Mr. William,	1 00
Ames, Mr. H. S.	3 00
Ames, Mrs. J. B.	5 00
Andersen, Mr. J. M.	5 00
Anonymous,	42 00
Asten, Mrs. Thomas R.	5 00
Auchincloss, Mrs. H. D.	5 00
Ayer, C. F.	10 00
Babcock, Mr. F. L.	2 00
Babson, Caroline W.	1 00
Bacon, Miss E. S.	10 00
Bain, Mrs. J. H.	5 00
Baker, Jr., Mr. L. D.	1 00
Barhydt, Mrs. P. Hackley, ..	10 00
Barron, Mr. George D.	1 00
Barstow, Mr. J. M.	1 00
Bartlett, Mary F.	5 00
Bartol, Mr. E. F.	5 00
Baruch, Mr. Bernard M.	10 00
Baugh, Margaret L.	100 00
Baxter, Miss Lucy W.	3 00
Baylies, Mrs. N. E.	2 00
Beal, Betsey S.	2 00
Beale, Mr. Phelan,	1 00
Beals, Miss Ella M.	1 00
Beckwith, Mrs. L. F.	3 00
Beaufort, W. H. de.	5 00
Beebe, Mrs. William H. H. ..	2 00

Carried forward. \$2,446 50

LIST OF CONTRIBUTORS, continued

Brought forward	\$2,446 50
Beech, Mrs. Herbert.	10 00
Bell, Mrs. D. M.	2 00
Bickmore, Prof. Albert S.	5 00
Bigelow, Mrs. Joseph L.	5 00
Bishop, Mr. William D.	3 00
Blanchard, Miss Sarah H.	10 00
Blashfield, Evangeline W.	5 00
Bliss, Miss Catherine A.	25 00
Bogert, Walter L.	1 00
Boggs, Miss M. A.	2 00
Bole, Mr. Ben P.	5 00
Bolling, Mrs. Raynal C.	5 00
Bosworth, Miss E. N.	2 00
Bradley, Abby A.	1 00
Braman, Mr. & Mrs. Dwight	2 00
Brackett, Mrs. I. Lewis.	5 00
Bremer, Mr. Theodore G.	1 00
Brent, Mrs. Duncan Kenner. .	2 00
Brewer, Mr. E. M.	10 00
Bridge, Mr. & Mrs. Edmund	10 00
Brookes, Miss Julia E.	2 00
Brooks, Mrs. Peter C.	200 00
Brown, Mrs. C. S.	2 00
Brown, Miss Ethel C.	1 00
Brown, Mr. Harry P.	1 00
Bryant, Mrs. E. B.	20 00
Bullard, Mr. H. C.	2 00
"C. V. V. P."	1 00
Cameron, Mr. E. S.	1 00
Canfield, Mr. R. A.	10 00
Channing, E.	1 00
Chase, Miss Alice P.	5 00
Casey, Mr. Edward Pearce. .	5 00
Chase, Mrs. Alice B.	10 00
Chandler & Co.,	5 00
Chase, R. Stuart.	2 00
Chapin, Mr. Chester W.	10 00
Chase, Annie S.	1 00
Chapman, Mrs. John Jay. .	2 00
Cheever, Miss Helen.	1 00
Cimmins, Mrs. Thomas.	2 00
Clarke, Mrs. E. A. S.	1 50
Clarke, Miss Ella Mabel	10 00
Cleveland, Mrs. Clement, ...	1 00
Clark, Mrs. George C.	5 00
Clerk, A. G.	1 00
Cleveland, Dr. & Mrs.	1 00
Codman, Miss Catherine A. .	1 00
Codman, Mrs. James M.	1 00
Coffin, Mr. H. R.	1 00
Colgate, Mr. R. R.	10 00
Collins, Miss Ellen,	10 00
Collins, Miss Gertrude,	5 00
Colon, Mr. George Edward. .	2 00
Conant, Mr. Earnest L.	1 00
Converse, Mrs. C. C.	10 00
Coolidge, Archibald Cary ...	5 00
Cooper, Mr. Newton.	5 00
Crams, Mr. M. W.	1 00
Currier, Mr. B. H.	5 00

Carried forward. \$2,917 50

LIST OF CONTRIBUTORS, continued

Brought forward	\$2,917 50
Crehore, Mr. Frederic M.	5 00
Cushing, Miss Margaret W. . .	1 00
Crews, Miss L.	1 00
Currier, R. M.	2 00
Crocker, Rev. W. T.	1 00
Curtis, Mrs. Louis.	2 00
Cross, Mr. A. R.	1 00
Cutter, Dr. George W.	1 00
Davis, Mr. Richard Harding. .	5 00
Davis, Mr. William T.	5 00
Davis, Lucy B.	2 00
Dawes, Elizabeth B.	10 00
Delafield, Mrs. John Ross. . .	5 00
Deland, Margaret.	2 00
de Rham, Mr. H. C.	10 00
Davis, Miss E. F.	2 00
Dexter, Mr. S. W.	5 00
Day, Mrs. F. A.	1 00
Dix, Mrs. John M.	1 00
Douglass, Elizabeth P. and Adeline.	5 00
Dryden, Mrs. John F.	25 00
Dunbar, Harriet W.	1 00
Dunham, Mr. Carroll.	10 00
"E. D. S."	5 00
Eastman, Miss Mary.	1 00
Edes, Dr. Robert H.	2 00
Edmands, Mrs. John S.	5 00
Emerson, Mr. D. R.	2 00
Emerson, Elliot S.	1 00
Emerson, Miss Susan G.	1 00
Emery, Miss Georgina.	5 00
Estabrook, Mr. Arthur F.	1 00
Emery, Miss Louisa J.	5 00
Evarts, Miss Mary.	5 00
"F. E. F."	5 00
Fillebrown, Mr. C. B.	1 00
Ferguson, Frances.	5 00
Fohr, Mr. Franz.	1 00
French, Mr. Daniel C.	2 00
Friedman, Mrs. M.	2 00
"Friend"	1 00
Friers, Miss Emilie.	1 00
Frothingham, Mrs. S.	1 00
Gault, Mr. B. T.	2 00
Gibbs, Mr. H. E. A.	50 00
Gladding, Mr. John R.	10 00
Glazier, Mr. Henry S.	10 00
Goddard, Julia.	2 00
Gould, Mr. Edwin.	50 00
Green, Caroline S.	1 00
Greene, Mrs. E. F.	1 00
Greenwood, Mr. J. William. .	2 00
Grinnell, Frank W.	1 00
Gwalther, Mr. Henry L.	2 00
Hackney, Mr. Walter S.	10 00
Hager, George W.	2 00
Hale, Jr., Mr. Thomas.	1 00
Harkness, Mr. David W.	1 00
Harris, Miss Frances K.	3 00
Harvey, Miss Ruth S.	3 00

Carried forward.....\$3,223 50

LIST OF CONTRIBUTORS, continued

Brought forward	\$3,223 50
Heath, Mr. J. A.	2 00
Hodenpyl, Mr. Anton G.	10 00
Holt, Mrs. M. S.	10 00
Howe, Miss Fanny H. Q.	1 00
Hovey & Co., H. A.	1 00
Hoyt, Miss G. L.	5 00
Hubbard, Mr. & Mrs. T. H. .	10 00
Hussey, Mr. William H.	5 00
Hyde, Mr. Herman A.	1 00
Ives, Mr. William Jay.	2 00
J. A. B.	1 00
Jackson, Jr., Mr. P.	1 00
Jacobus, Mr. John S.	3 00
James, Mrs. Arthur C.	10 00
James, Mrs. D. Willis.	25 00
Jenckes, Mr. John.	5 00
Jesup, Mrs. Morris K.	5 00
Johnston, J. W.	100 00
Jones, Mrs. Cadwalder.	5 00
Jones, Laura Graham.	10 00
Jones, Mr. Charles H.	5 00
Jones, Josephine G.	10 00
Judson, Mr. H. I.	1 00
Juilliard, Mrs. August D.	25 00
Keeler, Mrs. Charles Bradley	5 00
Keim, Mr. Thomas D.	1 00
Kempster, Mr. James.	25 00
Kennedy, Mrs. John S.	25 00
Kimball, Mrs. D. P.	25 00
Kuser, Mr. John Dryden.	2 00
Landerdale, Mr. J. V.	1 00
Langeloth, Mr. Jacob.	3 00
Langmann, Dr. G.	10 00
Lasell, Louisa W.	1 00
Lawrence, Mr. John Burling. .	5 00
Lawrence, Mrs. Samuel.	10 00
Lewis, Edwin J.	1 00
Linnæan Society.	50 00
Lippett, Mrs. C.	2 00
Livingston, Miss A. P.	5 00
Little, Mr. Walter S.	1 00
Lombard, Mr. A. S.	2 00
Long, Mr. Harry V.	2 00
Lusk, Miss Anna H.	1 00
Mackay, Mrs.	10 00
Mackay, Mr. Oscar T.	5 00
Mahl, Mr. William.	5 00
Marloe, Mr. Henry S.	5 00
Mellen, Mr. George M.	1 00
Meyer, Miss Heloise.	50 00
Mott, Miss Marian.	1 00
Miller, Mr. R.	5 00
Murray, Mr. J. Irwin, Jr., . .	1 00
McAlpin, Jr., Mr. D. H.	1 00
Neustadt, Mr. A.	5 00
Olcott, Mr. Dudley.	10 00
Oppenheim, Mr. Myron H. . .	1 00
Osborn, Mr. Carl H.	2 00
Osterholt, Mr. E.	5 00
Penfield, A. S.	1 00
Perkins, Mrs. George W.	10 00

Carried forward.....\$3,771 50

LIST OF CONTRIBUTORS, continued

Brought forward	\$3,771	50
Phinney, C. G.	1	00
Prall, Mr. J. H.	1	00
Parlaghy, Princess Luoff.	1	00
Pulitzer, Mr. Ralph.	10	00
Quimby, Eunice W.	1	00
Randolph, Mr. Coleman.	5	00
Randolph, Miss Fanny F.	5	00
Reeves, Mr. C. H.	1	00
Roberts, Miss Mary A.	2	50
Rogers, Mrs. Hubert E.	2	00
Sawyer, Mrs. C. R.	1	00
Searles, J. M.	1	00
Sheffield, Mr. G. St. J.	5	00
Scofield, Marion.	10	00
Slade, Mr. Francis Louis.	1	00
Slingluffs, Mrs. K.	1	00
Smillie, Mr. James C.	1	00
Smith, Mr. Albert J.	1	00
Smith, H. A.	1	00
Snow, Mr. Elbridge G.	5	00
Sturgis, F. K.	5	00
Spafford, Miss Cecilia H.	2	00
Spring, Miss Anna Riker.	5	00
Stern, Mr. Benjamin.	10	00
Steers, Mr. James R.	5	00
Stetson, Mr. Francis Lynde.	10	00
Stone, Miss E. B.	25	00
Stratton, Miss Katherine W.	1	00
Stryker, Mr. Thomas H.	1	00
Tappan, Miss Mary A.	1	00
Taylor, Mrs. Samuel L.	1	04
Thorne, Mr. G. Wisner.	5	00
Titus, Jr., Mr. E.	2	00
Trumbull, Clara F.	1	00
Troescher, Mr. A. F.	10	00
Tyzzar, Prof. E. E.	3	00
Ulman, Mrs. Carl J.	2	00
Vanderpoel, Mr. George B.	25	00
Vreeland, Mr. Frederick K.	2	00
"W. F. B."	1	00
Wadsworth, Mr. Clarence S.	1	00
Weil, Mr. Richard.	1	00
Wilcox, Prof. M. A.	10	00
Willard, Miss Helen.	3	00
Wilson, Jr., Mr. Orme.	5	00
Wilson, Mrs. M. Orme.	25	00
Wood, Mrs. Charles.	25	00
Wyman, Helen R.	5	00
Zabriskie, Mr. Andrew C.	2	00
Total to July 2.	\$4,022	54

Letters from Teachers

Below are printed a few of the many dozens of letters which have been received from teachers who conducted Junior Audubon Classes the past year, under the plan provided by the Association. They are reproduced for the twofold purpose of acquainting our readers with the

character of work which the teachers are doing in these classes, and, second, because it is believed that they contain suggestions which may be of assistance to other teachers just undertaking similar endeavors.

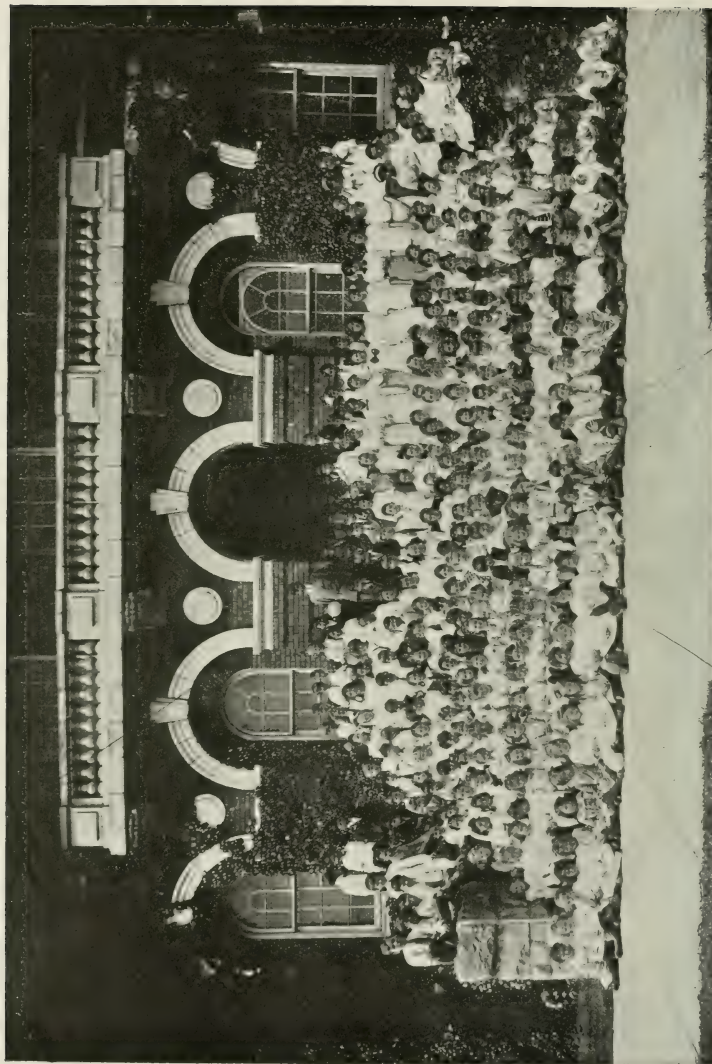
"I want to write you about the little Junior Audubon Society we had at school this year. We all enjoyed it exceedingly, and I am sure it did good in the hearts and lives of the little people who were members, and in the bird world too.

"A year ago, I invited the children of some of the other grades to join our Audubon class, and we had over forty members. We had our meetings on Friday afternoons after school. The class was quite successful, and we saw some direct results of its success. Several nest-robbing boys gave up that "sport" altogether. One boy was instrumental in bringing about the arrest of some men who had been shooting song-birds.

"This year, I had the class only in my own grade—the second. Almost every child in the room joined, making twenty members. I had daily periods for nature study and language, and every other Friday we used these two periods for the Audubon class. The children were always anxious for the Audubon Fridays to come. They used often to ask, 'Is tomorrow Bird Day, Miss Beth?' and if I answered in the affirmative I heard 'Oh goody! and I won't forget to wear my button, and I wonder what bird it will be,' from every side. Rarely did we have an absent mark on Bird Day.

"After we had used all of the ten leaflets you had sent us, we had lessons on some of the other birds, or, instead of a regular lesson, we went for a bird walk. I divided the class for these walks, taking ten children at a time. How excited they would get over the birds they saw! Nearly always they could identify the birds themselves. Sometimes I helped them, sometimes my bird-book helped me, and sometimes we had to write in the notebooks, 'unknown.'

"I will not try to tell you all about the good results of our Audubon class that I



JUNIOR AUDUBON CLASS OF 279 MEMBERS, FORMED BY MISS INA C. DEWITT, TENAFLY, N. J.

have noticed. The most important thing, I think, is that a few more children have a keen interest in, and a true love for, their little brothers of the air.

"Last year, a favorite pastime of a neighbor was shooting birds for his cat, and I think he was no more particular than the cat as to the kind of bird. His little daughter was a member of the Audubon class, and this spring I noticed that our neighbor's cat has to catch its own birds. Perhaps, if the little girl can be an Audubon member another year, there will be no more cat.

"A mother of another little member of the class used to delight in birds' plumes, breasts or feathers of some kind on her hat. Her spring hat this year was trimmed with ribbon.

"I have heard several bird-lovers say that they have noticed more of our common wild birds about this place than there were last year, and they believe the Junior Audubon Societies in the schools have been the cause.

"When school closed, many of the mothers came to me and said that they wished to thank me for what I had done for their children along the line of nature study, especially of birds. They said that they thought the Junior Audubon Class was a splendid thing for their children. I pass the thanks on to you, where it rightfully belongs.—BETH MERRITT, *Sunshine, Tenn.*"

"The Junior Audubon Society of the Tenaflly, N. J., Public School has a membership of two hundred and seventy-nine.

"Every month, a half-hour's nature talk is given by me in each grade. Although we study insects, trees and flowers, we devote a part of each lesson to the study of birds. I find this the most pleasing topic to them. The pupils are now familiar with our most common birds.

"The boys and girls showed great interest, last winter, by putting out food for the birds during the severe weather.

"This spring, bird-houses were made in the manual training department by the pupils of the fifth and seventh grades.

"I think the outlook is bright for the protection of our feathered friends in this vicinity.—INA C. DEWITT, Supervisor of Nature Study, *Tenaflly, New Jersey.*"

"It gives me pleasure to say that, although we were late in the school term in beginning these classes, yet I think we accomplished some good for the birds. We succeeded in interesting many more children than the 51 I reported as members, and many of these have been feeding and watching the birds about their homes, and have put up bird-boxes, which were promptly occupied, to the great delight of the owners. One boy who had been notably cruel to the birds has become a most interested member, and a lady of the town tells me that this one 'convert' was worth all the efforts of the class, even if nothing else has been done.

"Our bird day, to which we invited the public, was a great success, and was repeated at the request of the superintendent of the school. I would suggest to teachers of Junior Audubon classes that they having a similar day—giving a bird program, showing the value of the birds to the farmers, etc. I think the plan of having these Junior Classes is a most excellent and practical one, and can be used in any kind of a school with the most gratifying results.

BIRD LORE is read with interest by our pupils, and I have encouraged them to take it home, so that their parents may become interested.—LAURA L. FAUCETTE, *Lenoir, N. C.*

"I believe I was quite successful with my Junior Audubon class, for the children seem to take an interest in observing the birds, and in telling me all they could about them. They had some very interesting things to tell sometimes.

"Every Thursday morning we would have a program arranged for which we allowed twenty minutes of our first period. It consisted of a short composition on the bird we had selected to study that week, a poem on birds, which was recited

by a member of the class, then the president would call on two or three members of the class to tell what they had found out about the bird during that week. Then we would arrange the program for the next week and take up our regular lessons.—MINNIE CHILDS, *Annapolis, Maryland.*

"My pupils have very much enjoyed the work of the Pitcher Junior Audubon class. Scarcely a day passes that some one doesn't bring in a new observation to report.

"They feed and protect the birds, and every child shows a new tenderness and thought for the little wild things of life. The idea grew out of the fact that so many dead birds were found in the recess yard, due to the very severe winter. Every

morning the children brought crumbs, and soon found the birds waiting for them at feeding-time. They have taken great interest in reading the literature sent out by the National Audubon Society, and have learned much by comparing the birds they see with the pictures sent with the leaflets.

"The boys have made bird-houses, and I am sending you photos taken of the entire school, also of a group of boys with their bird-houses, which we have taken at your request.

"I thank you in behalf of the children and for myself for your helpful interest, and wish the Society may grow and prosper and give as much profit and pleasure to other children as you have given to us. —ADA M. ROUSE, *Detroit, Michigan.*"



SECTION OF AN AUDUBON CLASS AT DETROIT, MICHIGAN, ORGANIZED BY
MISS ADA M. ROUSE, TEACHER



1. TOWHEE. Male
2. TOWHEE. Female

3. ARCTIC TOWHEE. Female
4. ARCTIC TOWHEE. Male

(One-half natural size)

Bird = Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. XIV

SEPTEMBER—OCTOBER, 1912

No. 5

Phœbe vs. Catbird

A STUDY IN ADAPTABILITY

By A. A. ALLEN, Ithaca, N. Y.

With photographs by the author



PHŒBE'S NEST OVER THE FRONT
DOOR OF A DWELLING, SHOWING ADAP-
TABILITY.

WHEN the white man first set foot upon this continent, he discovered a race of men whom he called savages. Poorly clad to his notion, and armed with most primitive weapons, they made war upon one another or roamed the forest in pursuit of game. Little of nature's control did they assume, but adapted their lives to her laws and her forces. Then came the white man, changing all. Forests were cut down and grainfields sprang up; deer and bear made way for horses and cattle. Unable to accustom himself to these great changes, the red man moved away from the coast to a place where he could still live as had his fathers before him. But the white man carried his civilization farther and farther inland. No longer was there the limitless forest filled with deer and bear and otter; no longer the vast plain dotted with

herds of bison. They passed and with them the Indian.

When the white man first set foot upon this continent, he found conditions entirely new to him. There were no factories to make his clothes, no markets to supply his food. There were only the great forest, the streams and

a power within which said "I can." But the forests became settlements, the streams became power, and, in due time, there were factories to make his clothes and markets to supply his food. In this way, marching inland, he first adapted himself to nature and nature, in turn, yielded to him. The redskin disappeared for the white had come to stay.

When the Indian roamed the paths of his forest he came upon signs of deer and bear, and beheld vast flocks of pigeons. When the white man roams



PHOEBE AT ITS NEST ON THE CLIFF

the streets of his city, he comes upon signs of horses and automobiles, and beholds vast flocks of English Sparrows. As the red man gave way before the white, so did his game and birds. Even now as the metropolis absorbs the country, the birds of the open give way to those of the city; streets replace roads and Sparrows replace Larks; parks replace woods and Robins replace Veerys.

But during these great changes, a few birds have been able to adapt themselves. As forests of chimneys arose in place of the forests of hollow trees,

the Swifts did not yield, but plastered their nests to sooty bricks instead of to crumbling wood; Night-hawks found level gravel beds on the roofs of tall buildings, and the Martins, Wrens and Bluebirds found nesting-holes in eaves and gutters. Thus one might multiply examples until he recognized two groups of birds: the one which is able to adapt itself to changing conditions, the other which succumbs to them.

The Catbird is a bird of the thickets. Lurking in the densest vines and brambles, it comes out only to scold at an intruder or to sing. So long as the hawthorns, grape-vines or berry bushes survive, so long will the Catbirds; but when these disappear, the Catbird goes with them.

The Phœbe is a bird of the cliffs and gorges. Its nest of mud and moss was found originally only where the shelving rocks of an exposed ledge protected it from above and below. In such places it is still the most abundant bird; but with the appearance of culverts and bridges, the Phœbe found these places suitable for its nest. In fact, it goes even a step further and builds its nest about houses and barns wherever it can find one ledge to support and another above to protect it.

There is a road which skirts the border of a certain marsh. On one side is a dense, almost impenetrable, thicket where the Catbirds nest and are almost as abundant as the Sparrows in the town hall. On the other side rises a rather low but perpendicular cliff where the Phœbes build. While photographing one of the Phœbe's nests, it occurred to me that some object placed upon the nest might prevent the bird from returning until after inspecting from the adjacent branch. Here the light was stronger and would permit of a more fully timed exposure. Accordingly a strip of yellow cloth about eighteen inches long was placed over the nest with one end lightly tucked into a crevice to prevent its blowing away. The Phœbe returned to its chosen perch on a log and was about to fly to the nest when it espied the rag. Here was something



PHŒBE INSPECTING FROM THE END OF A
NEAR-BY LOG



CATBIRD INCUBATING



CATBIRD INSPECTING THE RAG

which it probably never had encountered. Eagerly the issue was awaited and great was the surprise when it behaved in the most sensible way. After inspecting the cloth for several minutes, it flew directly to the nest and fed its young. Then hovering, it grasped one end of the cloth in its bill and flying backwards sufficiently to dislodge it, turned and flew about twenty-five feet before dropping it. The experiment was repeated several times and each time with the same result. The yellow cloth was exchanged for a red one but the color seemed to make no difference, and it was treated in the same way. Such is the record of fact. Not being versed in psychology, I can not analyze the sensations that must have arisen in the bird when it was confronted by this totally new experience, nor can I follow the reactions which permitted it to perceive that the brilliant rag was harmless and informed it how it could be dislodged, but I do know that all birds would not have behaved in the same way. This was discovered the next day when the experiment was repeated with a Catbird.

Two or three days were employed in accustoming this bird to the removal of leaves from before the nest and to the placing of the camera until it incubated apparently undisturbed. If frightened away by too close an approach, it soon returned. The same yellow cloth was placed over the nest. The following is a record of what happened as transcribed from my journal of that date. "During the first ten minutes that the cloth was in place upon the nest,

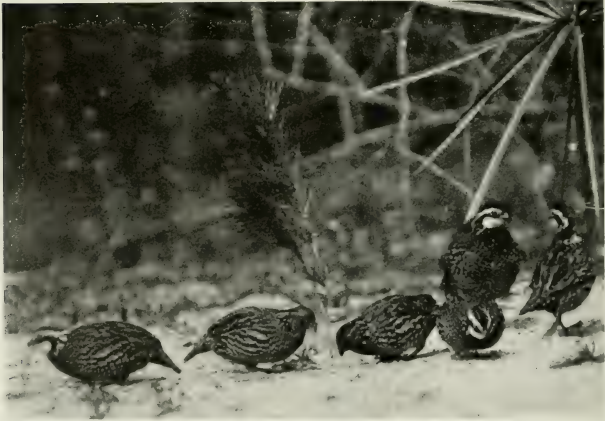
the female bird inspected ten times at fairly regular intervals, usually peering from the rear or the side. The first and eighth times however, she walked around the edge of the nest. After the tenth inspection, an interval of four minutes ensued before she returned. She then passed around the nest, but inspected its edges more than the rag. The feathers of the nape were usually raised during inspection. After an interval of one minute, she approached the nest from the side, crouching and ruffling the feathers as if about to incubate. She then left for four minutes. Appearing again, she started to incubate on the thick mat of twigs and leaves at one side of the nest, remaining in this



PHEBE FLYING BACKWARD TO
DISLodge THE RAG

position with the feathers ruffled for thirty seconds. The next time she stayed away nine minutes and returned only to inspect from the rear. Intervals of six and seven minutes followed, the bird apparently taking less and less interest in the nest. Realizing this, I became anxious for the safety of the eggs and removed the cloth. In three minutes more she was back in the bush but did not inspect the nest. Ten minutes later, however, she returned apparently to stay, inspected the eggs and began at once to incubate."

This was very different behavior from that of the Phœbe, which with little more than a glance grasped the situation and acted accordingly. The Catbird, on the contrary, was unable to comprehend and did nothing to alleviate. What light this throws on the natures of the two birds. The one, with changing conditions, has been able to adapt itself, the other has remained ever the same. Surely this foreshadows the future. At present both are among our common birds. The Phœbe will become more and more so as he copes with new conditions, the Catbird rarer and rarer as time goes on. Today we see the white man's house on every hill; the red man's, we find only on the reservation.



FLORIDA BOB-WHITES

Photographed at Ormond, Florida, by George Shiras, 3d.

The Story of Peter, a Purple Martin

By FANNY HARDY ECKSTORM



MARTINS

PETER came to me in an automobile, his own physician attending him.

"I found him fluttering in the ditch," said the doctor, "and took him along. He seems to have flown against something, but I cannot find any broken bones; so I think he is more your sort of a patient than mine."

Thereupon I took Peter in. This was August 24, 1906, and he lived with me just two weeks.

His name at first was not Peter. He was just a young Purple Martin without any individuality, and a very sore and sick bird, too. All the great muscles of his breast were green from a bruise, caused probably

by flying against a wire, and his left wing was crippled from the lameness of his breast. He was suffering greatly from the pain and shock, and for the first day sat stupidly upon a little perch which I made for him on the kitchen ironing-table. He did not care for food, he would not drink, he refused a bath, he was so alarmed at a cage that I dared not try to confine him. His dislike for water was so marked that I named him Simon Peter. It was later on, when I began to respect him for his courage, that I shortened it to Peter.

The only thing of which I ever saw him show any fear was captivity. Though he trusted me implicitly and would let me handle him as I pleased, he never would let me clasp him about the wings with my fingers. Nor was it because I hurt his lame breast, for I was careful not to do that. Peter insisted with so much spirit upon enjoying his freedom that I underwent considerable annoyance rather than cage him.

After the first forty-eight hours, Peter began to improve rapidly. His eyes brightened, his appetite came back, and in spite of the soreness of his breast he began to be alert and inquisitive. He had to learn the art of being fed by hand, but he was so quick in acquiring knowledge that one lesson was enough. I think I never saw a creature with a better brain. His power of association was remarkable, and his memory was very strong. Like most wild creatures he was quick in the mastery of new problems. Individuals,

even from the same brood or litter, I have found vary much in intelligence, but I am far from seeing in the wild creature the automaton that some recent investigators declare animals to be.

Peter's appetite proved to be a very good one when it came back to him. I find it recorded on August 26 that he ate ninety-four house-flies, "the first good meal since he came." This seems to show that he ate them at a sitting. I never saw his appetite for flies sated. On September 3 I have it noted down that I fed him a hundred and fifty house-flies by count "and certainly as many more which I did not count, and quite a little raw meat." Indeed, I found fly-catching such hard work that I was obliged to find a substitute for flies. I resorted to fresh beef ground very fine in a meat chopper. Peter relished this and from the first ate it eagerly, but it was too hearty for him and the effect upon his digestion was not good. He would eat a teaspoonful at a time if I would give it to him, but I fed it sparingly and only when I could not get a sufficient number of flies. I found I was not very well supplied with that necessary article of diet and unless I got them when they clustered upon the screen door of the kitchen to enjoy the warmth, or when the morning sun shone into the kitchen porch and they gathered there to warm up after the cool night, Peter and I were not lucky in our hunting.

Peter was ready at all times to work for his dinner. He enjoyed his fly-catching exercises, and was never happier than when I struck my fly-killer down in front of him inviting him to hop upon it and be carried out-of-doors. He at once jumped upon the velvet-covered edge of it and balanced there while I took him where I wanted him to go. In this way, or perched upon my finger, I sometimes carried him far down the street to visit. He never made an attempt to flutter off his perch, wherever I took him. The fly-killing game he learned directly, and the moment he saw the implement of destruction he would almost beg me to take him out-of-doors. He showed all the eagerness of a hunting-dog who sees a gun.

The first thing to do was to make sure that no cats were about. They had learned all about Peter and were on the lookout for him. If the coast was clear I would lower his perch and Peter would hop upon the floor of the porch. Immediately he became all eager attention. He quivered with excitement. When a fly fell he would run and pick it up, his wings set out like outriggers. For a short-legged bird he ran remarkably well. His eyes were always upon his game, while mine had to be chiefly upon him because he dashed about so rapidly that there was danger of stepping upon him. Peter never flinched from the strokes of the fly-killer, though I often brought it down close beside him with a smart whack. He watched the fly and when it fell he darted to pick it up. I have seen him try to catch his own flies, springing up a short distance to pick them off the wall. More than once I saw him mistake a nail-head for a fly and rise to that. It was pretty to see him trotting back and forth, so busy and happy. When I tired of our game—Peter never tired of

it—I would strike down the fly-killer beside him, he would hop upon it and we would go indoors. I do not remember how he told the difference between this close of the performance and our previous fly-killing, but I have the impression that he learned some difference in my actions.

In his diet Peter was inclined to be eclectic. He had an inquisitive spirit and tried a variety of substances, some of which were better suited to him than others. I do not recollect experimenting upon him myself except to try him once with blueberries. Had he been very hungry I think he would have eaten a small quantity willingly. But if anything looked good to him, Peter was willing to taste of it. One day, on coming into the house after an absence, I found that Peter had made an error of judgment. He had tried to eat a whole hearth rug. It had long fringes and Peter had begun to swallow one of the fringes with the result that I found him anchored with his head very close to the floor. The only safe way to release him was to draw the yarn out of his crop. I pulled out about three inches, a process which he did not much enjoy but was none the worse for afterward.

Peter was the tamest bird I ever saw, yet he was perfectly untamable. He was wholly dependable, but very high-spirited. He had no nerves and seemed not to know what fear was. Yet he was high-strung and excitable. Through my acquaintance with Peter I came to understand that the Swallow tribe must be birds of fine breeding; Peter had the marks of "pedigree." It seems to be this which explains the fighting propensities of a bird which, wholly unarmed as to either beak or claws, is a born fighter. The Purple Martins are as belligerent as any bird we have. They will have pitched battles with the English Sparrows, and I have known such a battle to go on for three days, some of each side being killed in the encounters. The Martin, the Hummingbird and the Kingbird I have always accounted our most warlike birds until this year when I have made the acquaintance of a Migrant Shrike which has reduced a Kingbird nesting in the same orchard almost to tears, as one might say. The Kingbird has not dared call his soul his own. But though warlike abroad, in his domestic character the Martin is singularly gentle. I always found Peter's disposition serene and affectionate. He enjoyed being stroked and fondled, provided I made no attempt to clasp him about the body. Perched upon my head or on my shoulder, he would ride all about the house. However, if anybody said "fight," Peter asked no second invitation.

Peter and my little cocker spaniel Judy might be characterized as friendly foes. They bickered rather than fought. If Peter was brave, Judy was just the reverse; the only thing she ever dared attack was cabbage butterflies, which she had learned were probably not "laying for her." Even flies sometimes turned into bees; for Judy was no naturalist. Peter she regarded as an intruder, and, though small, so bold a bird might be dangerous. She would bark at him furiously but she dared not attack. Sometimes when I came into the house after dark it was Judy's barking, as she entered before me, which warned me

not to tread on Peter. I usually found him not a foot from her nose, on the defensive, while she pranced and yelped at him. For, after he got well enough to leave his perch on the table, Peter got in the habit of wandering around by himself; an open door was his opportunity. I generally discovered him either perched upon one of the rounds of a dining-room chair, or snugly tucked away in a little tunnel under the sofa pillows on the couch. Here he was always found facing outward. Perhaps an instinct of the immemorial nesting of his tribe in holes made him feel at home in this little hole under the pillows.

Judy was an enemy to be despised, but Peter had a foe of a different nature. One of my neighbors owned a coal-black coon-cat, with great yellow eyes like two full moons. "Coony" was an inveterate bird-catcher, a fierce and subtle beast. He was interested in Peter and would steal up to my kitchen door and gaze into the room, calculating his chances of a good meal. Often I found him there. Peter also enjoyed going to the screen door and looking out. He would cling to it and climb nearly to the top, but usually he stayed in the lower panel. I have heard Peter chattering defiantly in the kitchen, and, on going to him, have found him clinging to one side of the screen door while "Coony" on the other was clawing it and trying to get him. Was Peter afraid? Not Peter! Peter was enjoying it. His heart did not flutter except with valiant rage. There was no symptom of fear about him. Crippled as he was, he was perfectly ready to stand up and fight the cat. I fear Peter was a poor judge of character, for seldom have I seen a cat with which a bird would have had such an unequal contest.

Daily I exercised Peter, trying to get his wing in condition. In ten days it improved very much. His first feeble flutterings were little downward flights; then he was able to sustain himself on a level for a short distance; and finally he undertook to rise. He got so that he could fly from my hand to the ell of the house. The trouble was to induce him to return. He seemed to think my time of as little value as his. And on account of cats I had to watch not only him but the whole neighborhood. Once he gave me a sad fright by flying from the ridgepole down the other side of the house. I expected to find him devoured by some lurking cat over there, but on hurrying around I found him sitting in the grass, ready to be taken up.

Meantime I was anxiously watching the migration of the Martins. It was now well into September, and the nights were cool and the supply of flies growing perceptibly less. Peter was getting in condition to travel, but would he have any traveling companions? Day by day I watched the flights of Martins wheeling about the church spire and saw their ranks get thinner and thinner. It was the last end of the migration and although he was well and fat, Peter was hardly in condition for the strain of the long journey south. But there came a day when I decided to wait no longer. I gave Peter to my brother to take care of, and I never saw him afterward.

"Report of an Expedition to Laysan Islands in 1911"*

ON February 3, 1909, President Roosevelt signed an executive order creating the largest, and, in many respects, most important Bird Reservation of the fifty odd now existing. It is known as the Hawaiian Islands Reservation and consists "of a dozen or more islands, reefs, and shoals that stretch westward from the Hawaiian Islands proper for a distance of upwards of 1,500 miles toward Japan."

Laysan, ornithologically the principal island of the group, is known to American readers through the admirable work done on it by Walter K. Fisher, who, while on the S. S. 'Albatross,' visited the island in the summer of 1902 and subsequently published the results of his studies, together with the exceptionally interesting and successful photographs which he obtained.†

The present paper adds a chapter to the history of the island, and the facts it presents regarding the destruction of bird-life for millinery purposes so forcibly illustrate the need for bird protection even in the most remote parts of the globe, that by permission, we quote from it at length.

In his letter of transmittal, Mr. Henry W. Henshaw, Chief of the Biological Survey, writes:

"The Hawaiian Islands Reservation was established by Executive order in 1909 to serve as a refuge and breeding-place for the million of sea birds and waders that from time immemorial have resorted there yearly to raise their young or to rest while migrating. In 1909 a party of feather-hunters landed on Laysan, one of the twelve islands comprising the reservation, and killed more than 200,000 birds, notably Albatrosses, for millinery purposes. Through the prompt coöperation of the Secretary of the Treasury, the revenue cutter *Thetis*, under the command of Capt. W. V. E. Jacobs, was dispatched to the island and returned to Honolulu in January, 1910, with 23 poachers and their booty, consisting of the plumage of more than a quarter of a million birds. In the spring of 1911, a coöperative arrangement was effected with the University of Iowa, represented by Prof. C. C. Nutting, head of the zoölogical department, whereby an expedition was sent to Laysan, the largest and most important island of the group; to ascertain the present condition of the bird rookeries and to collect a series of birds for a museum exhibit."

This expedition, headed by Prof. Homer R. Dill, reached Laysan, April 24, 1911, and remained until June 5. Professor Dill writes:

"Our first impression of Laysan was that the poachers had stripped the

*Report of an Expedition to Laysan Islands in 1911, under the joint auspices of the United States Department of Agriculture and the University of Iowa. By Homer R. Dill, Assistant Professor of Zoölogy in the State University of Iowa, and Wm. Alanson Bryan, Professor of Zoölogy in the College of Hawaii. Bull. No. 42, Biological Survey, U. S. Dept. of Agriculture, Washington, 1912, pp. 1-30; pls. IX.

†See U. S. Fish Com. Bull. for 1903, pp. 1-39; The Auk, XX, 1903, pp. 384-397; XXI, 1904, pp. 8-20.



NESTING COLONY OF LAYSAN ALBATROSSES (*Diomedea immutabilis*)

By permission of the Biological Survey

place of bird life. An area of over three hundred acres on each side of the buildings was apparently abandoned. Only the Shearwaters moaning in their burrows, the little wingless Rail skulking from one grass tussock to another, and the saucy Finch remained. It is an excellent example of what Professor Nutting calls the survival of the inconspicuous.

"Here, on every side, are bones bleaching in the sun, showing where the poachers have piled the bodies of the birds as they stripped them of wings and feathers. In the old open guano shed (p. 283) were seen the remains of hundreds and possibly thousands of wings which were placed there but never cured for shipping, as the marauders were interrupted in their work.

"An old cistern back of one of the buildings tells a story of cruelty that surpasses anything else done by these heartless, sanguinary pirates, not excepting the practice of cutting the wings from living birds and leaving them to die of hemorrhage. In this dry cistern the living birds were kept by hundreds to slowly starve to death. In this way the fatty tissue lying next to the skin was used up, and the skin was left quite free from grease, so that it required little or no cleaning during preparation.

"Many other revolting sights, such as the remains of young birds that had been left to starve and birds with broken legs and deformed beaks, were to be seen. Killing clubs, nets, and other implements used by these marauders were lying all about. Hundreds of boxes to be used in shipping the bird-skins were packed in an old building. It was very evident they intended to carry on their slaughter as long as the birds lasted.

"Not only did they kill and skin the larger species but they caught and caged the Finch, Honey-eater, and Miller Bird. Cages and material for making them were found."

Prof. William A. Bryan, the representative of the National Association of Audubon Societies in Hawaii, through whom the depredations of the feather-hunters were brought to the attention of the Government, joined the expedition as a representative of the Biological Survey. Professor Bryan had visited Laysan in 1903 and was thus able to compare existing with past conditions. He writes:

"This wholesale killing has had an appalling effect on the colony. No one can estimate the thousands, perhaps hundreds of thousands, of birds that have been wilfully sacrificed on Laysan to the whim of fashion and the lust for gain. It is conservative to say that fully one-half the number of birds of both species of Albatross that were so abundant everywhere in 1903 have been killed. The colonies that remain are in a sadly decimated condition. Often a colony of a dozen or more birds will not have a single young. Over a large part of the island, in some sections a hundred acres in a place, that ten years ago was thickly inhabited by Albatrosses, not a single bird remains, while heaps of the slain lie as mute testimony of the awful slaughter of these beautiful, harmless, and, without doubt, beneficial inhabitants of the high seas.



GRAY-BACKED TERNS (*Sterna lunata*)
By permission of the Biological Survey

"While the main activity of the plume-hunters was directed against the Albatrosses, they were by no means averse to killing anything in the bird line that came their way. As a consequence large numbers of all the different species of birds that occur on this island were killed. Among the species slaughtered may be mentioned Black-footed Albatross, Laysan Albatross, Sooty Tern, Gray-backed Tern, Noddy Tern, Hawaiian Tern, White Tern, Bonin Island Petrel, Wedge-tailed Shearwater, Christmas Island Shearwater, Red-tailed Tropic Bird, Blue-faced Booby, Red-footed Booby, Man-o'-war Bird,



ALBATROSSES WINGS PILED IN AN OLD SHED BY MILLINERY COLLECTORS ON LAYSAN ISLAND

By permission of the Biological Survey

Bristle-thighed Curlew, and without doubt many of the few species of the smaller birds peculiar to Laysan as well as those that visit it as migrants.

"Fortunately, serious as were the depredations of the poachers, their operations were interrupted before any of the species had been completely exterminated. So far as the birds that secure their food from the sea are concerned, it is reasonable to suppose that they will increase in number, and that nature will in time restore this island to its former populous condition if no further slaughter is permitted."

Professor Bryan concludes his report with "Recommendations for the Future Protection of the Reservation" which it is hoped will be made effective.

Two Problems in Identification

WE reproduce, by permission, two of the many identification problems which are submitted to us for solution. The first illustrates how, even after seeing a bird repeatedly and having one's observations confirmed by others, a person more than ordinarily informed may see colors and patterns of coloration which do not exist. Fortunately, and what is much rarer, it also illustrates how opportunity for continued observation may finally convince one of the possibility of error and thereby make one more cautious in the future; and it is this frank confession of faulty observation which makes the experience of this bird student an especially valuable object lesson.

The second problem we reproduce exactly as we received it, as a model in exact observation and method of presentation. It required merely a glance at Mr. Williams' pencil sketch, with its accompanying notes, to see that his bird was the Troupial (*Icterus icterus*) of northern South America. This large, fine Oriole is a favorite cage-bird and numbers are imported to this country. Doubtless, therefore, Mr. Williams' bird, as well as one recorded by Audubon from Charleston, S. C., over seventy years ago, had escaped from captivity.

Mr. Williams' sketch illustrates so admirably the definite and satisfactory results to be obtained by the method he employed that we may be permitted to repeat here a plea already made for its general adoption:

"Even better than a description is a figure colored with crayons or water-colors. It may be the crudest outline and in ridiculous pose, but at least it is definite. There is no possibility of error through the wrong use of terms; the observer draws or charts what he sees. Neither art nor skill is required. Anyone can learn to make the outline of the normal bird figure as readily as he can learn to make the letters of the alphabet, and a little practice will enable one to give the shape of bill, wings and tail, and even a hint of characteristic form and position. Typical, passerine outline figures may be made in advance in one's field note-book, and the shape of the bill and color may be added while the bird is under observation. A collection of diagrams or sketches of this kind will be found to possess far greater individuality and value than mere written descriptions. If the sketch cannot be completed, if essential details are lacking, it is obvious that the subject has not been seen with that definiteness upon which satisfactory field identification should rest."—F. M. C.

PROBLEM NO. 1

Walters Park, Pa., July 9, 1912.

EDITOR OF BIRD-LORE.

Dear Sir: Can you give me some information about a Black Hummingbird? All the bird books state that only one species, the Ruby-throat, is to be found

in this section of the country, but on June 4, this season, I was watching a Baltimore Oriole on the top of a small dead dogwood tree, when suddenly a black Hummingbird, with a brilliant orange collar, came out of nowhere and perched on the tip top of a slender stem of the same tree. Since that date I have seen it more than fifty times and taken many acquaintances with me to see the exquisite little beauty, for it very rarely fails to appear within a few moments after I reach my post of observation, always perching on the same spot where I first discovered it, though several times its curiosity has led it to dart for a moment to a telephone wire and look me over at a distance of only a few feet. Sometimes it has darted up into a tulip tree and sipped among the blossoms there; once or twice I have seen it poisoning among honeysuckle blossoms. Yesterday two black Hummingbirds, one with orange collar not noticeable, supposedly the mate, were seen among the blossoms of a trumpet vine.

The bird is as tiny as the ordinary Hummingbird. The collar is narrow and does not meet in front. The breast seems a dark gray or slate color. Its bill is very black, long and slender. Altogether the little creature is a fascinating puzzle to me. Its friendliness, its look of elfish intelligence when perching, its willingness to be "called out" to its perch many times a day to be admired as it poses and prinks and preens, its unusual habit of frequent perching, its long sojourn, are all mystifying to me. I have so far failed to find the nest, which I supposed at first must account for the perching as if on sentinel duty, but it has been here now a month and five days and I don't know how much longer before I found it.

Any information about this mysterious little guest from the tropics would be greatly appreciated by me.

EDITOR OF BIRD-LORE.

[Walters Park, Pa., July 16, 1912.

Dear Sir: Your letter in regard to my "black Hummingbird" just received. My observation of the Hummers has been for the most part "on the wing," and I did not know their tendency to haunt favorite perches for such long periods. Thank you for this information.

A day or two after I wrote you, the little Hummer in question finally revealed his true identity, a Ruby-throat, as you surmised. Though knowing as I do the tendency of a bird's coloring to vary in different lights, "my pet Hummingbird" deceived me completely. Black he certainly appears when perching, and black a score or more of my acquaintances have also pronounced him while lesiurely observing him at only a few feet distance.

But one day he poised before a near-by trumpet flower at just the right angle for the sunlight to fall directly upon his back, and suddenly he became a brilliant green. As he turned to fly away the unmistakable ruby gleamed from his throat. A moment later he was again perching quite near me, again transformed into an elfish little black creature,—but his secret was mine at last.

Unmistakably an Oriole. Slightly larger than the Baltimore. Has a rich musical note heard over the Baltimore. Features are exactly those of a crow blackbird and the similarity is heightened by the yellow eyes.

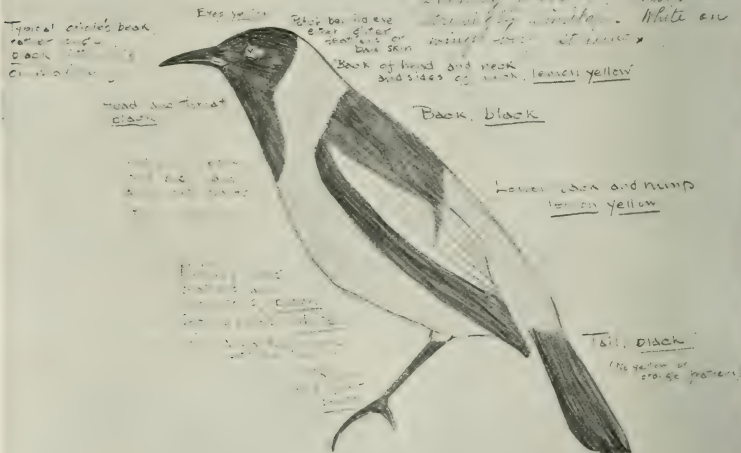
What is it?

Seen in back yard, (Keweenaw)
Apr. 14. 09. in apple tree
Apr. 15. 09. " " feeding on buds
May 3. 09 " " "

Individ. closely with field glass and drawing made directly from life and skinned minutely with bird.

When first seen, bird was in flight, and I shot instantly. "Shining green"! Legs are

strikingly white. White on



A SOUTH AMERICAN ORIOLE FROM OHIO

My dear Mr. Chapman: You may be interested in the enclosed sketch. It was made under such circumstances as to be quite accurate. We have kept a sharp lookout for the possible return of the bird but he has not appeared.

If you have any suggestion as to the bird's identity I should be greatly interested to hear it.

Sincerely yours,

A. B. WILLIAMS, JR.

The Migration of North American Sparrows

EIGHTEENTH PAPER

Compiled by Professor W. W. Cooke, Chiefly from Data in the Biological Survey

With drawings by LOUIS AGASSIZ FUERTES

(See Frontispiece)

TOWHEE

The Towhees of eastern North America have been separated into two forms differing in the color of the eyes; the southern form, the White-eyed Towhee, is resident in the southeastern United States from South Carolina to Florida. The breeding range of the other form, the Red-eyed Towhee, extends from near the northern boundary of the white-eyed form north to Canada. The two forms are together during the winter, the red-eyed race arriving in its southward migration at Raleigh, N. C., on the average, October 13, earliest, October 4, 1889; Atlanta, Ga., (near) average, October 12, earliest, October 5, 1903; northern Florida, average, October 15, earliest, October 11, 1903. It departs on the average from northern Florida, April 18, latest, May 2, 1909; Atlanta, Ga., (near) average, April 21, latest, April 27, 1902; Raleigh, N. C., average, May 7, latest, May 15, 1886. Near Gainesville, Texas, it arrives on the average, October 27, earliest, October 5, 1888; and leaves on the average, April 20, latest, May 12, 1885.

There could scarcely be found a better example of migration occurring earlier west of the Alleghenies than at corresponding latitudes to the eastward. The Towhees arrive in northern Ohio more than a month earlier than at the same latitude on the Atlantic coast. At the date of their arrival in Washington, D. C., they have already been present for a week at Beaver, Pa., a hundred and fifty miles farther north.

SPRING MIGRATION

PLACE	Number of years record	Average date of spring arrival	Earliest date of spring arrival
Newmarket, Va.....	14	April 19	March 31, 1889
White Sulphur Springs, W. Va.....	6	April 14	March 29, 1897
Washington, D. C.....	19	April 5	Rare, winter.
Philadelphia, Pa. (near).....	14	April 22	March 31, 1895
Berwyn, Pa.....	13	April 22	March 29, 1904
Beaver, Pa.....	10	March 29	March 13, 1908
Renovo, Pa.....	17	April 23	April 5, 1905
Morristown, N. J.....	10	April 22	April 15, 1905
Englewood, N. J.....	14	April 23	April 9, 1905
New Providence, N. J.....	10	April 24	April 17, 1893
Flatbush, N. Y.....	8	April 23	April 17, 1893
Alfred, N. Y.....	13	April 26	April 19, 1909
Hadlyme, Conn.....	0	April 24	April 20, 1896
Jewett City, Conn.....	15	April 24	April 13, 1886
Hartford, Conn.....	13	April 26	April 19, 1909

SPRING MIGRATION, continued

PLACE	Number of years' record	Average date of spring arrival	Earliest date of spring arrival
Providence, R. I.....	13	April 30	April 17, 1909
Taunton, Mass.....	6	April 26	April 24, 1889
Springfield, Mass.....	3	April 27	April 25, 1897
Beverly, Mass.....	12	May 4	April 25, 1908
Hydeville, Vt.....			May 6, 1887
Monadnock, N. H.....	3	May 2	May 1, 1902
Manchester, N. H.....	7	May 7	April 23, 1889
Durham, N. H.....	4	May 12	May 8, 1901
Portland, Maine.....	3	May 8	May 6, 1908
Phillips, Maine.....			May 14, 1905
Quebec, Canada.....			May 25, 1880
Helena, Ark.....	4	March 26	March 7, 1898
Lexington, Ky.....	4	March 1	February 25, 1906
Independence, Mo.....	5	March 12	February 28, 1898
St. Louis, Mo.....	5	March 13	February 13, 1909
Chicago, Ill.....	13	March 21	March 7, 1908
Silverwood, Ind.....	4	March 9	January 10, 1903
Frankford, Ind.....	8	March 11	March 1, 1900
Waterloo, Ind. (near).....	17	March 20	March 1, 1894
Wauseon, Ohio.....	8	March 19	March 10, 1898
Oberlin, Ohio.....	17	March 20	March 6, 1899
Petersburg, Mich.....	8	March 21	March 17, 1889
Plymouth, Mich.....	7	March 24	March 14, 1894
Plover Mills, Ontario.....	7	April 7	April 4, 1892
Galt, Ontario.....	12	April 13	March 28, 1899
Ottawa, Ontario.....			May 9, 1909
Hillsboro, Iowa.....	5	March 16	March 10, 1899
Indianola, Iowa.....	5	March 17	March 10, 1902
Grinnell, Iowa.....	4	March 20	March 18, 1888
Milwaukee, Wis.....	7	April 9	April 1, 1892
Madison, Wis.....	10	April 14	April 2, 1910
Green Bay, Wis.....	2	April 26	April 25, 1885
La Crosse, Wis.....	4	April 22	April 1, 1905
Lanesboro, Minn.....	9	April 16	April 11, 1889
Elk River, Minn.....	5	April 23	April 14, 1887
White Earth, Minn.....	2	May 8	May 7, 1881
Southeastern Kansas.....	7	March 7	March 3, 1906
Onaga, Kan.....	15	March 16	March 3, 1892
Southeastern Nebraska.....	13	March 19	March 4, 1902
Badger, Neb.....	4	April 18	April 13, 1903
Southeastern South Dakota.....	6	May 5	April 26, 1889
Grand Forks, N. D. (near).....	8	May 7	May 2, 1889
Aweme, Manitoba.....	11	May 18	April 30, 1904
Qu'Appelle, Saskatchewan.....	5	May 19	May 8, 1903

FALL MIGRATION

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Aweme, Manitoba.....	8	September 15	September 25, 1904
Lincoln, Neb.....			December 8, 1900
Onaga, Kan.....	12	October 21	November 23, 1896
Elk River, Minn.....			October 12, 1886
Lanesboro, Minn.....	6	October 14	November 8, 1885

FALL MIGRATION, continued

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Sabula, Iowa.....	10	October 18	October 23, 1893
Hillsboro, Iowa.....	4	October 25	October 31, 1898
Chicago, Ill.....	8	October 24	November 26, 1906
Southwestern Ontario.....	8	October 11	November 3, 1889
Vicksburg, Mich.....	4	October 27	November 5, 1904
Oberlin, Ohio.....	5	October 22	November 8, 1902
Wauseon, Ohio.....	7	October 21	November 12, 1884
Fort Wayne, Ind.....	5	October 19	November 29, 1906
Waterloo, Ind. (near).....	6	October 22	November 16, 1905
St. Louis, Mo.....			December 30, 1882
Portland, Maine.....			October 12, 1906
Southern New Hampshire.....	3	October 9	October 24, 1897
Providence, R. I.....	12	October 12	October 23, 1904
Hartford, Conn.....	7	October 11	October 25, 1909
New York City, N. Y. (near).....	12	October 17	November 4, 1891
Englewood, N. J.....	6	October 23	November 15, 1885
Morristown, N. J.....	8	October 26	December 19, 1908
Renovo, Pa.....	15	October 15	November 12, 1904
Beaver, Pa.....	7	October 21	October 26, 1909
Berwyn, Pa.....	13	October 14	November 3, 1888
Philadelphia, Pa. (near).....	12	October 23	November 9, 1886
Washington, D. C.....	8	October 21	Rare, winter

SPOTTED TOWHEE

The Spotted Towhees of western North America (*Pipilo maculatus*) have been divided into seven forms; one is confined to Mexico, one to southern Lower California, and one to the islands off the coast of southern California. A fourth form, the San Diego Towhee, is nearly, if not quite, non-migratory over a large part of California, while a fifth form, the Oregon Towhee, occurs on the coast from British Columbia to southern California, and is migratory at the two extremes of its range, but no definite statement can be made of its dates of migration. The other two forms, the Arctic and the Spurred Towhees, occupy the Rocky Mountains from southern Canada south to Mexico and the western part of the plains. They are both strictly migratory, but it is not possible to separate the migration records of the two forms.

SPRING MIGRATION

PLACE	Number of years' record	Average date of spring arrival	Earliest date of spring arrival
Valentine, Neb. (near).....	4	April 27	April 20, 1900
Beulah, Colo.....	6	April 10	March 31, 1907
Yuma, Colo.....	5	April 18	April 7, 1908
Boulder, Colo. (near).....	10	April 18	March 26, 1900
Cheyenne, Wyo.....			April 28, 1889
Terry, Mont.....	8	May 10	May 2, 1894
Great Falls, Mont. (near).....	8	May 11	May 6, 1904
Flagstaff, Alberta.....	5	May 20	May 11, 1908
Carson City, Nev.....			March 15, 1900
Rathdrum, Idaho.....	4	March 20	March 9, 1899
Okanagan Landing, B. C.....	3	April 18	March 19, 1910

The last Towhees were seen in northern Montana on the average, September 24, latest, October 9, 1905; Yuma, Colo., average, October 6, latest, October 10, 1908; Beulah, Colo., average, October 14, latest, October 27, 1910. The Towhees that spend the winter at Kerrville, Tex., have left there on the average, May 3, latest, May 8, 1907; and near Manhattan, Kan., average, May 3, latest, May 12, 1884.

Notes on the Plumage of North American Sparrows

SEVENTEENTH PAPER

By FRANK M. CHAPMAN

(See frontispiece)

Towhee (*Pipilo e. erythrophthalmus*, Figs. 1, 2). The nestling Towhee is a sparrow-like looking bird with both upper and underparts streaked with blackish. When the tail-feathers are sufficiently grown, their black or brown color and broad white tips show that the bird is not a true Sparrow, and its characters are quickly revealed when the postjuvenal molt begins. At this molt all the body feathers, all but the primary wing-coverts, the tertials, and, according to Dwight, even the tail, are lost, and the bird passes directly into a plumage which differs from that of fully adult specimens only in having the primary coverts slightly browner. Molting birds are thus at times most curiously mottled, males particularly showing black patches of the incoming first winter plumage surrounded by the brown, streaked juvenal plumage.

The sexes can be distinguished as soon as the tail is long enough to see whether it is composed of the black feathers of the male or brown ones of the female.

There is no spring molt, and summer birds differ from winter ones only in having more worn plumage.

Arctic Towhee (*Pipilo maculatus arcticus*, Figs. 4, 5). Our six western races of *Pipilo maculatus* differ from the eastern Towhee chiefly in the greater amount of white in the wing-coverts and scapulars and in the darker color of the female.

The juvenal plumage is darker and more heavily streaked, this being particularly true of the dark race (*P. m. oregonus*) inhabiting the humid Pacific Coast region from northern California to British Columbia, showing that the characters of the adult are inherited.

So far as plumage changes are concerned the western bird appears to agree with the eastern one, the adult plumage being acquired at the postjuvenal molt, in which all the feathers except the secondaries and the primaries and their coverts are shed.

Notes from Field and Study

Long Island Notes

In this section of Long Island, where the native trees are almost entirely pine, and running water is absolutely lacking, most of the smaller birds—Thrushes, Warblers, Vireos, Flycatchers, etc.—do not remain to nest, though a few species seem just suited and stay by the hundred. But the migrations of May, 1912, brought for a few days at least, such a plenty of birds as must have delighted any student.

The first week of the month was very wet and stormy, probably seriously delaying the migrants, but between May 9 and 11 there came a flight quite worthy of note. Especially in the village were the birds plentiful, where many maples and other deciduous trees have been cultivated for years, and among the earliest to attract notice were a number of Scarlet Tanagers—full colored males—who rambled about on at least two days in couples, trios, and even, on one occasion, in a quartet, a beautiful sight. On another day I saw three Rose-breasted Grosbeaks (males), a Baltimore Oriole, a Catbird, a Hummingbird, several Red-eyed Vireos, and Warblers—! The Pine, Black-throated Green, and Yellow-rumped Warblers were already here, and these three days added in quantity the Parula, Black-and-white and Black-throated Blue, and in fewer numbers the Redstart, Maryland Yellowthroat, Magnolia, Chestnut-sided, Yellow, Blackpoll, Louisiana Water-Thrush and Oven-bird. No doubt I missed many others, for it was often impossible to recognize one before a new song or flick of color on a near-by branch made it difficult to keep my attention on the first.

One little corner was almost ideal: about a quarter of an acre not far from the main street, but so surrounded by hedges and tall pines that it was quite shut off from people and houses. It seemed to have been an old-time lawn

from the bright-colored shrubs along one side, then a few small fruit trees and on the north side of the lot, against a perfect background of pines, a big cherry tree in full blossom. That cherry tree was the Warblers' harbor, and I had only to wait quietly under a near-by pear tree and look and listen as they approached from every side.

That certainly was the great migration of the season. By May 12 it was mostly over, and by May 17 few except those intending to nest here were to be found. By the latter date the Prairie Warbler had become noticeable, and now these are plentiful, particularly in a tract that once was thick with second-growth pine, but in May, 1911, was severely burned. The big brakes and quick-growing underbrush have already covered the ground, but the stark, ragged trees above, some still showing green along the higher branches, others dead to the very tops, all still black with the smut of burning, offer a sad apology for the grace and beauty of thirteen months ago.

The Yellowthroats also have remained in numbers, generally choosing quarters where the masses of low scrub-oak and the woods are trying to overcome each other. Beyond these two I know of no other Warblers now here.

The Pine Warbler was an early arrival, my first date being April 21, the last May 17. During most of that time they were present in considerable numbers, and their song was so exactly like that of the Chippy that by song alone I never felt certain which bird I heard.

Since May 15, a Great-crested Flycatcher has been in the neighborhood; later still a few Pewees arrived, and toward the middle of June a Kingbird showed himself occasionally.

By the middle of May also, and since, Brown Thrashers have been nearly as abundant as the Chewinks, and from late April till late in May, Goldfinches were

beyond number. Now the last are more scattered for nesting and more quiet. A few Red-Eyes are likely to be found later in the summer, but at the present date I seldom hear one.

Thrushes of all sorts are very few, even during migrations; but I have seen a Veery on two occasions, and last summer two Wood Thrushes used to sing regularly from a dense grove of pines in the center of the village. This year I believe a pair is nesting near by.

The Baltimore Orioles are still singing along the principal streets, and as their favorite elms are very scarce, they seem to prefer maples and the tall white locusts for nest-trees. In some localities, Purple Martins have nested for years in boxes put up for them, but I have had no personal experience with them and reports indicate that they are growing a little scarce. House Wrens also are quite ready to use suitable boxes.

But the Blue Jays and Flickers here are no more the wild birds of the woods that I had formerly supposed them, than are Song Sparrows! Flickers do not winter here to my knowledge, but appeared early in April, and two weeks later they were to be heard and seen in every direction—on the ground, in trees, flying over the fields, drumming, calling every note they could remember (and that's quite a variety!) and before long they began to investigate old holes and start new ones. Suitable wood seemed to be the only necessity, for the hole might be freshly drilled in some old dead favorite in the woods with several black holes of past years within a few feet, in the hollow of an old apple tree, in the top of a telephone pole beside the road, or—the best I have yet seen—in an old stump only thirty-five feet from the corner of a piazza. The last, to be sure, is on the property of a true bird-lover, far enough from the village to be free of English Sparrows, where the many trees contain boxes for the Wrens and Martins and where, above all, a water-pan is kept filled. Here the Flickers come as well as others, not only to drink but often to bathe, and delight

their hostess by spattering the water to the very edge of the porch. Yet the Flickers had troubles, for once the stump was cut down and had to be nailed back in place, and a strip of tin fastened around to discourage cats, for the hole is just at a convenient height to look in. Yet this is the fourth season they have used it.

Blue Jays are plentiful all the year and are ready to nest in the pines or big arborvitæ hedges on one's lawn, or in the woods, as the case may be. But now, of course, they are far less noisy than earlier in the spring.

Chimney Swifts are plentiful, a number of Barn Swallows and Whip-poor-wills are in evidence, while on several occasions I thought a Night Hawk called, but never could find the bird. A few Doves are about also, and almost any fine morning, soon after sunrise, their soft cooing may be heard. All the spring Bluebirds have been decidedly scarce, making me wonder if the fast-increasing Starlings are partly the cause.

I have not mentioned the innumerable Purple Grackles and Meadow Larks, nor the Sparrows. Of the last, those nesting are Chippy, Song, Field and Vesper, the last less common now than in May; and I saw a few Fox and White-throated during migrations. Red Crossbills, which were about at odd times during the winter, surprised me on May 17—a flock of eight!

As the honeysuckle opens I hope each day for the appearance of a pair of Hummers, for last summer they nested on a maple branch beside one of the main auto streets, using dandelion puffs and the usual covering of small pieces of lichen.
—ISABEL MCC. LEMMON, *Brentwood, L. I.*

A Talented Song Sparrow

Our little circle of bird-lovers were enjoying the beauty of a June morning, lounging under a maple, far enough removed from the house to escape the after-breakfast noises from the kitchen. Indeed any noises would have seemed an intrusion upon the mute speech of flower and leaf, and meadow and scented air,

that perfect morning. It must have been a sense of this that kept our talk within few words, uttered softly, as though loud speech would have broken an enthralling charm. But we were to be shown that not all sounds are at variance with June's best showing. From somewhere among the leaves overhead came the notes of a Song Sparrow. The melody was repeated over and over, as something too good to be given only once. No intrusion upon June's perfect harmony. No discord. Rather it was a fit musical setting for the beauty around us. After the singer stopped there was a pause long enough to make us believe he had flown away, when the song was renewed. But how different! The arrangement of the notes was entirely new. At first we thought the bird must have gone and another Sparrow taken his place, though the song seemed to come from the same position in the tree.

We arose and walked about, peering up through the branches. There he sat at the top of a dead bough, with head pointing upward as though offering the best that was in him to the skies. A song of sunrise, a song that goes with moods of serene joy and hope. Let evening take the Wood Thrush, the Veery and the Hermit Thrush. Our little brown bird is the melodist of the day new-born.

Again he stopped. We watched to see whether he might fly away. It began to dawn upon us that the period of silence meant more than a mere cessation of the music. We were on the alert for the renewed song; and this time there would be no doubt of the identity of the singer. Presently the head pointed skyward again and the notes floated down to us. An entirely different song again—different from either of the others in the arrangement and succession of the notes.

It is not because he is tired then that the Song Sparrow pauses in his song, but in order that he may compose another melody. Other singers have great variety of notes; as the Mockingbird, the Brown Thrush and the Catbird; but what other bird sings a set song many times over, then, after a pause, another one entirely

different, and so on through changes so numerous that they seem limitless?

The modest little singer had revealed himself as something more than an unconscious voicing of nature's melodies. He seemed a composer who sings his song many times, then ceases and invents another which he voices, and another, and as many as he chooses. Since that day we have regarded him as in a class by himself—the creative artist of the winged choir.—GEORGE A. DENNISON, 256 79th St., Brooklyn, N. Y.

Bluebirds vs. Wrens

Hoping to entice some birds to build near our new little cottage, we fastened a gourd on the post of our porch. Sure enough, early in the spring, came the tiny Wren, bringing his busy little wife, who hopped onto the rose bush, and then in and out several times, while he sat on the porch support and sang his little song. After only a few moments' investigation they both went to work, and to us who were watching, seemed quite contented.

On the third morning while we stood watching the little builders, who should come flying right against the Wren and knock him off his perch, but a Bluebird, who, to the little Wren, I am sure, looked enormous.

So, all morning, every time the Wrens came with grass or other material for their nest the Bluebird would fly against them and drive them away. Finally the Bluebird must have grown very angry, for he flew into the gourd and we could see him scratching and tearing up the work of the Wrens, and one stick too long to come out of the door, he took in his bill and flew with such force, that, to our surprise, he tumbled out head first, but the twig came also, and he flew away. This old bachelor bird (for he was alone) kept watch over the gourd and succeeded in dispossessing the Wrens. In time he found a mate and they built their nest and raised their little family of three.

It was a great pleasure to watch the parent birds feeding the young, and how

hard they had to work! Every time we dug in the garden they flew almost at our feet, snatched a grub and flew to the nest.

The male bird brought his contribution, put it into one little open mouth, then would fly away; while the mother bird always waited and carried away the white droppings, and thus kept their home clean.

The day the little ones left the nest was almost as exciting to the watchers as to the birds themselves. Instead of the usual meal, brought between four and five o'clock, the parent birds kept away, and from time to time would give a call from a near-by post or branch. At each call the little birds would stick their heads out, first one, then two, and once, all three.

Finally, after nearly half an hour of this calling, with a great flutter of wings, out they came. One flew aimlessly away over the fields, and one big bird followed. The other two did not go far and were joined by the mother bird, who led them by easy stages from tree to tree.

The others hopped all around the yard, perched on fence and hedge, but they did not return to the home although we watched till dark.

The gourd had been vacant about two weeks when one day two Wrens came and took possession. The watchers felt sure it was the same pair, and we again took up our position of watching.

They did not use the Bluebirds' nest, except as a support, but built a very small one on the side. Almost before it was finished, back came Mr. Bluebird, and drove them away.

He would sit on a fence-post or a branch and, just as in the early spring, seemed to watch until the little Wrens came, then up he would come and drive them away.

The watchers tried to help the little birds by clapping their hands or "shooing" him away. The Wren would utter his shrill cry of alarm and when either of us would go to see what was the trouble, the Bluebird was sure to be there, sometimes standing in the door.

At our approach the Bluebird flew

away, but the Wrens never did; they seemed to know we wanted to help them.

But it was of no use; one day Mr. Bluebird flew into the nest and whether he broke the eggs or tore up the nest, we never knew, but the Wrens never came back.

This was a revelation to us, for we had never known the Bluebird was so pugnacious. But after all he was human-like, and wanted what he wanted and guarded what he thought was his home.—MRS. M. M. WARING, *Knoxville, Tenn.*

A Tragedy Narrowly Averted

We have a small orchard on our residence lot in a county-seat town in south-eastern Iowa. The orchard occupies the rear half of the lot. At the farther end of the orchard stands a fine box-elder tree which has been kept carefully trimmed to certain outward dimensions for years. The fact that this tree is not permitted to gratify its ambitions to grow tall and likewise spread out over all the surrounding orchard, causes it to form an exceedingly dense top with thousands of small intermingling branches and twigs. The foliage of this tree is so dense that the rays of the sun scarcely ever find their way through it to the earth beneath.

Now, although all the members of a family of five pass under this tree numerous times daily, yet the Catbirds have made it their home for many summers. They have cheered us with their song morning, noon and night. One of the favorite stations for the bird to occupy while singing or scanning the surrounding trees for food has often been upon the pump-handle, the pump being situated about twenty feet from the kitchen window. Besides the music which they have furnished us free and unsolicited, they have destroyed thousands of green worms, caterpillars, slugs, and insects of every variety. Of all the native song birds which visit this part of the country, I believe there is only one, the Brown Thrush, that has a more varied and pleasing song than has the Catbird.

An incident which occurred a year ago and might readily have developed into a tragedy, had it not been for some of my own nocturnal habits, was announced by a sudden, loud fluttering and screeching noise, the like of which I had not heard before, coming from our box-elder tree at about eleven o'clock P.M.

I suspected the trouble, and hurriedly arming myself with a stout club I made my way as fast as my legs could carry me to the scene of the disturbance. There, in the faint moonlight, I could see the outline of the birds' greatest enemy, the stray cat! and its fiery yellow eyes were staring at me in the darkness under the tree! It had crawled up the tree and through the branches until it was about two feet from the birds' nest when the alarm was given. Well, the reader may rest assured that if I had had a shot-gun instead of my Bushman's weapon, the town ordinance against shooting within the corporation would have been broken into small bits right then and there. As it was, I could only let my club go with all my might in the direction of the thief, and, contrary to my usual luck and expectation, I hit the feline square. Cat and club came to the ground with a thud, but before I could make any further hostile demonstrations the cat had disappeared into the darkness, and not to return, so far as I know, for the birds continued to sing and feed their young till they were fledged, and took their journey on stout and tireless wings to the sunny Southland.

But the incident which I wanted especially to relate in this paper is one of more recent occurrence. This spring of 1912, as usual, these birds made their appearance about May 1, but did not make active preparations for house-keeping till some weeks later, and, by the last of May, their new nest in the box-elder was nearing completion. On June 1, while strolling in the orchard, my attention was called to the box-elder by a lot of vigorous fluttering and scolding near the Catbirds' nest. One bird was visible from my position and seemed to

be watching those near-by, who, as I thought, were having an argument as to which one of the two should occupy the nearly completed nest. They were hidden from my view, however, by the foliage. The trouble seemed to me to last an unusually long time and I began to wonder at the apparent pugnacity of these attractive little songsters. My curiosity led me to approach a little closer and closer, and still the racket went on. When I came directly under the nest the one bird which had been visible to me all the time and had been sitting perfectly still, not giving me any attention before, noticed me and flew away, and, to my astonishment, I saw that the other two birds were not fighting, as I had supposed, but were tangled up in some ordinary white pack-cord, such as dry-goods merchants use in tying up their wares. The children had been playing with this cord about the yard, and evidently these birds had picked it up and carried it to the tree, and, in their struggles to get some ten or twelve feet of it through the branches to the nest, got so tangled up in it that had I not discovered them, and, with the assistance of a handy step-ladder, set them free, they would no doubt both have perished in a few hours. I found that one of the birds had the cord looped about its neck several times and was literally "hung up by the neck;" the other bird had the cord about one wing and one leg, also one coil around its body. When I approached them closely they made such frantic efforts to get away that one of them broke the cord and flew away taking the coils about its neck along, but the other was tied up so securely that I had to loosen the cord before it could get away. I took the cord out of the tree and on measurement found there were between ten and twelve feet of it in one piece.

I supposed that the injuries the birds might have received, together with their fright, would keep them away for this season, but, as I am writing (this is six days since that, the birds' eventful day).

they have finished the nest and seem to be incubating.

Several questions naturally arise in one's mind in connection with this remarkable affair. Are the birds now occupying the nest the same individuals who were caught in the tangle? Where did the third bird come from so suddenly, that it could stand by and sympathetically watch their struggles for freedom? Was it possible for one of these birds to gather up twelve feet of this cord and carry it the length of the lot to the box-elder, or did both the birds tackle the job in concerted action? If one bird carried the cord alone, how or when did the other bird "get into the game?" It certainly would have been an interesting thing to have been able to watch these birds from the time they found the cord till I found them in their helpless predicament.—E. D. NAUMAN, *Sigourney, Iowa*.

A Yellow Warbler's Nest

Early in May a member of my household was sitting on a side-porch sewing. Unnoticed, a few small bits of the cloth and edging on which she was at work were blown into the grass a foot or two away.

Her attention was called to them by seeing a Yellow Warbler, who came closer and closer to these bits of cloth and edging, and while watching her, took them, one at a time, into a hedge of lilac and syringa bushes, a few feet distant.

This suggested that he was building and wanted material for his nest, and to meet this need still further, bits of cotton were put on a fence-post that was under the lilac bush.

Although the bird was not in sight when this was done, as soon as one was a foot or more away, he would come to the post, look at her and go off with the cotton.

This was repeated several times a day for three or four days, and when he ceased to take it, we knew no more was needed.

Weeks went on and the little family were reared and the nest abandoned, but

it was most interesting to see with what skill it had been made.

Woven in with the dried grasses, hair and roots, were the cotton, the white cambric and the Hamburg edging.

The birds remained near us, enjoying the raspberries and the bird-bath, and we hope to welcome them another year, having had ample evidence that the Yellow Warbler is grateful for help and glad to be friendly.—E. J. LUTHER, *Milton, Mass.*

Nesting of the Carolina Wren

Readers of BIRD-LORE may be interested in knowing that this summer we had two Carolina Wren's nests built on the concrete piers under our porch. Between the piers are heavy wire screens. Several tiny crevices where the frames do not come quite to the ground served as the way for the birds to get in and out. The Wrens became as tame as the House Wren, and were a great pleasure. The nests were built of grass, moss and leaves, and were both arched over with the opening on the side. While we have delighted in their songs the three years we have lived here, they have been so shy, that, although singing constantly in trees close to the house, we were never able to get a good view of them before. They started singing this year while the snow was still on the ground. During July they were especially musical. From four o'clock in the morning until sunset hardly a half hour would pass that we were not treated to one of their many different songs. We are hoping for a whole colony of Carolinas under our porch next year. A barberry hedge that has been planted on the three sides of the house will make it a still more secluded and desirable place.—MARY GILES BLUNT, *Gaithersburg, Maryland*.

Bluebirds in Minnesota

Noticing the communication in BIRD-LORE regarding the scarcity of Bluebirds in certain parts of the country I thought it might be of interest to bird-lovers to

know that these birds have been quite plentiful here since early spring. I believe them to be as common as they were during the spring and summer months of 1911. The Bluebird is one of the first birds to appear in spring, usually arriving about April 1. The weather was rather bad about that time this year, and none of them were seen until April 6. Since that date I have seen them regularly and have found several nests. A rural mail-carrier who makes a thirty-mile drive daily informed me that he also had seen them many times.—HARRY B. LOGAN, JR., *Royalton, Minn.*

White Pelicans in Ohio

On the morning of August 21, 1912, my attention was called to two strange birds which had stopped on our lake, and upon investigating I found them to be a pair of White Pelicans. This is rather unusual as there is no case on record of Pelicans being seen in this vicinity, and their appearance anywhere in the state is of rare occurrence.

They were first seen on the evening of August 20, and evidently remained on the lake during the night. The next morning they took flight and after circling about for some time came back to the water again. This was repeated several times, after which they left and have not been seen since.—W. H. WISMAN, *New Paris, Ohio.*

Goldfinches and Bluebirds in Massachusetts

The American Goldfinches were very numerous in Williamstown, Mass., during the height of the spring migration. The first arrivals were seen by the writer on March 21, about a half-dozen being noticed at that time. These were still in their winter plumage. A few were seen occasionally up to May 6, then large numbers of them were seen for two weeks, these being in full summer plumage. The air was literally filled with their merry little notes while they swung in the tree-

tops or dotted the lawns. It was noticed by all who are interested in birds that there were an unusually large number of them this year. This summer, however, the number has been normal.

It was interesting to find in the last number of BIRD-LORE that the Bluebirds were very scarce in several places, for the scarcity of the Bluebirds has been regretfully noticed here. The first one noticed was very late, being seen on March 19. Only one or two were found after that at rare intervals, there seeming to be no regular migratory flocks. I have noticed only two pairs nesting in this vicinity this year.—W. J. CARTWRIGHT, *Williamstown, Mass.*

Northern Pileated Woodpecker at Corvallis, Oregon

On May 19, 1912, I observed a pair of Northern Pileated Woodpeckers in the second growth timber on Hind's Hill at an elevation of about 1,000 feet. The birds appeared shy and flew deeper into the timber as soon as they saw me. This is the first record I have of this bird. It is reported as formerly common here but is now rarely seen.—A. J. STOVER, *Corvallis, Ore.*

Prairie Horned Lark in Maine

In June, 1911, I saw a pair of Prairie Horned Larks fly out of the road just ahead of me. I have never observed them before at Auburn, Maine. I did not see them again until August, when I saw five near the same place on a piece of newly plowed ground, one of them being pure white. Here I observed them every day for several days in succession.

The Horned Lark is common here in the months of February and March. Prof. J. Y. Stanton, of Bates College, tells me that the only difference between the Prairie Horned Lark and Horned Lark is that the Prairie Horned Lark is slightly smaller with a tinge of yellow instead of white on the throat.—W. H. WATERMAN, *Auburn, Maine.*

Book News and Reviews

MICHIGAN BIRD LIFE; A List of all the Bird Species known to occur in the State together with an outline of their Classification and an account of the Life History of Each Species, with special reference to its Relation to Agriculture. With seventy Full-page Plates and one hundred and fifty-two Text Figures. By WALTER BRADFORD BARROWS, S. B., Professor of Zoölogy and Physiology and Curator of the General Museum. Special Bulletin of the Department of Zoölogy and Physiology of the Michigan Agricultural College. Published by the Michigan Agricultural College, 1912. 8vo., xiv + 822 pages. Price, paper, 45 cents; cloth, 60 cents; transportation, 35 cents. Applications should be sent to Secretary A. M. Brown, East Lansing, Mich.

As the title indicates, this is a complete work on the birds of the area it covers, and, so far as text is concerned, it at once takes its place among the notable books on the birds of a state.

An introduction of thirty-one pages treats of 'Topography,' 'Climate,' 'Distribution of Plant Life,' 'Distribution of Animal Life,' 'Bird Life in Michigan,' 'Recent Changes in the Bird Life of the State,' 'How to Study Birds,' and 'Migration,' while Appendices contain a 'Hypothetical List,' 'Bibliography,' 'Glossary,' 'Outline of Classification,' and 'List of Contributors,' the last, including some 214 names, shows the many sources on which Professor Barrows has drawn for information, and is an index of the thoroughness of his work.

The body of the book (pp. 33-729) is devoted to the biographies of the 325 species and subspecies (plus one in Appendix I) which are accorded rank as Michigan birds. Here we have keys to orders, families and species, descriptions of plumage, and outline of general range, a detailed, historical statement of the bird's status and manner of occurrence in Michigan, with data on food, voice, nesting habits, etc.; all of which, it is obvious, make the book of value everywhere and indispensable in Michigan.

Professor Barrows evidently has small use for the students of birds through an opera-glass but believes "that the student who searches the woods carefully for a bird which he has never seen, who follows up each unknown call or song, watches with care each doubtful and illusive form which suggests the bird desired, and finally, perhaps after hundreds of disappointments, kills a specimen of the much-coveted species and measures, preserves and labels it for his collection, has gained a knowledge of the appearance, habits, notes, size and structure of this species which could be obtained in no other possible way" (p. 13). That a better knowledge of "size" and "structure" may be gained by killing a bird than by permitting it to live is true enough, but the very fact that it has been killed makes it also equally true that all opportunity for that intimate study of "appearance," "habits," and "notes" which (as Professor Barrow's book itself shows) we so greatly need, ends with the bird's life.

No bird student armed with a gun stops to study the notes, habits, or appearance of some rare or strange bird. The desire for acquisition is too strong. Professor Barrows quotes Dr. Coues on the needless slaughter of bird-life, but he will remember that it was Coues who wrote "I fear I must tell you to shoot an unknown bird on sight." There was more excuse for saying this thirty years ago than there is today, but are we never to pass the stage where students who prefer to study living birds rather than dead ones may do so without killing them?

Professor Barrows endorses the requirement that the "record" of any species for a given locality should rest upon an actual specimen taken in that locality, but surely ornithology consists of something more than making records. It has been the making of "records" of such rare birds as Brewster's and Lawrence's Warblers, for example, which has so

often robbed us of opportunities to solve the mystery of their relationships, and what little we do know about them, Professor Barrows must admit, we owe largely to those bird students who have been armed with opera-glass and camera, rather than with a gun. And it is to the observations of these same students that we must turn for the largest and most important contributions to our knowledge of the life-histories of our birds which have been made in the past fifteen years. This is as it should be, and the fact serves to mark an advance in our methods of study resulting from the increased advantages which the bird student of today possesses.

Time was in eastern North America when collecting was necessary, but unless the student has some definite use for specimens as specimens, he may proceed with his study without killing its object. Keys for identification and elaborate faunal treatises now solve his problems of identification and give him detailed information in regard to times of occurrence, and among works of this kind none, we are sure, will prove to be more useful than this admirable work by Professor Barrows.—F. M. C.

DISTRIBUTION AND ORIGIN OF LIFE IN AMERICA. By ROBERT FRANCIS SCHARFF, Ph. B., B. Sc. New York. The Macmillan Company, 1912, 8vo., xvi + 497 pages, 21 maps. Price \$3.

Dr. Scharff has placed in this volume an immense amount of information in regard to the distribution of animals, and while we doubt if his interpretation of the facts presented will find wide acceptance by zoögeographers, his most aggressive critic cannot but be thankful for the data which he has made so easily available for reference.

Dr. Scharff is a continent builder; he takes the most surprising liberties with the earth's surface, throwing out bridges connecting hemisphere with hemisphere in defiance of geologic probabilities, and where the negative evidence outweighs the positive many times over.

Negative evidence, however, he is

inclined to ignore nor does he make due allowance for the often obvious incompleteness of recorded information, while an examination of specimens rather than records would readily convince Dr. Scharff that he has given undue weight to differences between closely allied forms.

To read, for example, his remarks on Bermuda birds would lead one to believe that most of the barely recognizable forms inhabiting those islands were strikingly different from their continental relatives, while his comments on the Bluebirds inhabiting Bermuda seem so irrelevant that one almost questions their seriousness.

These islands, by the way, which have been hitherto regarded as of purely oceanic origin, Dr. Scharff believes "to have formed part of a wide belt of land, which extended northward from the West Indies, joining the mainland of North America somewhere near Massachusetts, at a time when most of the existing coast line of the Atlantic States south of Massachusetts was submerged." The fact, however, that Bermuda land-birds find their continental representatives in the South Atlantic States is not mentioned.

The influence of past climatic changes, particularly those occasioned by glacial periods, Dr. Scharff considers of small importance, nor does he give much weight to winds, currents, and other agencies which are usually considered to play a part in forming the life of islands.

No doubt there is adequate ground for some of Dr. Scharff's theories, but many of them rest on so slight a basis, and he argues for such profound changes in the earth's surface on such relatively unimportant and insufficient grounds, that we fear his methods will tend to bring the science of zoögeography into disrepute among more conservative students.

Nevertheless, Dr. Scharff has made a contribution to this subject of the highest importance, and one which must be considered by all future workers in this field; but in our opinion it is a volume for the discriminating naturalist and not for the general reader.—F. M. C.

The Ornithological Magazines

THE CONDOR.—The July number of 'The Condor' may fairly be termed a Rocky Mountain number since three of the five general articles and the only review are devoted to the birds of this region. In the opening article Mrs. Bailey gives, in her usual graceful style, an account of the characteristic 'Birds of the Cottonwood Groves' near Glorieta and the Taos Pueblo, New Mexico, and in the Conejos River bottoms in Colorado. Another instalment of the interesting series of papers on the bird life of the Barr Lake region, near Denver, is contained in 'Notes on the Wading Birds,' made by R. B. Rockwell and L. J. Hersey, and illustrated by thirteen photographs. Nine species are treated briefly and nine at length. One of the most interesting records is that of the nesting of Wilson's Snipe on June 20, 1908, at Barr, a point within the Upper Sonoran Zone.

The bird life of Colorado as a whole is discussed by Prof. W. W. Cooke in a formal review of W. L. Sclater's recent 'History of the Birds of Colorado,' which is characterized as "among the very best of the State bird lists," and in a special article on 'The Present Status of the Colorado Check-List of Birds.' The lists of Cooke, 1909, and Sclater, 1912, are compared and the discrepancies explained in detail. In conclusion, Cooke maintains that Sclater's list of 395 species should be reduced by the subtraction of 7 doubtful species and increased by the addition of 15 others. "This makes a Colorado list of 403 species about which there cannot be much question."

The only papers on California birds are Ray's account of the species noted in 1910 during a 'Journey to the Star Lake Country,' in the Lake Tahoe region, and Bryant's 'Present and Future Status of the California Valley Quail.' The latter article is a careful study of the various factors affecting the present abundance of the species, considered under six heads: food, cover, enemies, disease, weather and hunters. A map based on reports from

deputy game wardens shows the relative abundance of Quail at various points in the state in January, 1912. This paper merits careful reading by all who are interested in the subject from the standpoint of geographic distribution or game protection. The author concludes that food-supply is the most important of the factors mentioned, that natural enemies are of little consequence, and that there is little immediate danger from disease. The hunter has in recent years become a very important factor and his destructiveness should be curbed by reasonable bag limits and by an open season limited to the months of November and December.—T. S. P.

Book News

WE learn from 'The Ibis' for July that, with the issue of the October, 1912, number, concluding the ninth series and fifty-fourth year of that journal, Dr. Philip Lutley Sclater will resign the editorial duties, which either alone, or in association with Salvin, Saunders, or Evans, he has borne for forty-two years, and will be succeeded by his son William Lutley Sclater, well known to American ornithologists as the author of the 'Birds of Colorado.'

THE Biological Survey issues, as Farmers' Bulletin No. 510, its annual summary of the game laws and of the provisions relating to seasons, shipments, sale of game, licenses, etc. As an official document of wide general interest the press throughout the country gives much space to abstracts of this publication and the information it contains is thus brought prominently to the attention of the public.

BIRD students who visit the island of Jamaica will be glad to know of an excellent list of the birds of the island by Dr. P. L. Sclater, which was published in the 'Handbook of Jamaica for 1910.' It lists 194 species, of which 99 are permanent residents, 52 winter visitants, and 43 occasional visitors.

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

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Bird-Lore's Motto:

A Bird in the Bush Is Worth Two in the Hand

THE thirtieth annual congress of the American Ornithologists' Union will be held at the Museum of Comparative Zoölogy in Cambridge, Massachusetts, November 12-14, 1912. No one who has ever attended an A. O. U. Congress thereafter misses one if he can help it! Consequently no one who is eligible for election to membership in the A. O. U. should neglect the opportunity to associate himself with others of kindred tastes. If he cannot attend the annual congresses of the Union he can at least read of them, and of many other things ornithological, in the pages of 'The Auk.' All information will be supplied by Dr. J. Dwight, Jr., Treas., 134 West 71st St., New York City.

MR. JOSEPH GRINNELL, of the Museum of Vertebrate Zoölogy of the University of California, has recently published as Pacific Coast Avifauna No. 8, of the Cooper Ornithological Club, an authoritative check-list of California birds which prompts us to make certain remarks on check-lists and local lists in general.

Such lists are designed primarily to tell us how many and what kinds of birds are found in the region they cover, and the information thus conveyed may be used in a great variety of ways, but, as with a dictionary, the prime requisite of a check-list is *ease of reference*.

It is therefore a matter of regret when the compiler of a list of this nature presents it in such a form that its reference

value is largely destroyed. This, in our opinion, Mr. Grinnell has done by failing to adopt in the publication mentioned above, a classification which for nearly thirty years has been the standard in North America and which is familiar to all students of North American birds,—that is, the classification of the 'Check-List' of the American Ornithologists' Union. That this classification is antiquated and does not represent currently accepted views regarding the relationships of our birds is beyond question, but we maintain that a check-list, and particularly a list containing only a fraction of the birds of the world, is not the place in which to adopt a classification differing radically from the one in common use and recognized as a standard in the country where the list is produced.

The American Ornithologists' Union very wisely took this ground in dealing with the birds of a very much wider area than Mr. Grinnell's list covers, and considering ease of reference of more importance than the adoption of an admittedly tentative (even if the latest) scheme of classification, employed in the 1910 edition of its 'Check-List of North American Birds' the classification used in preceding editions. The object for which the book was issued was thereby served and its reference value maintained.

The whole subject of classification is a most difficult and, in many respects, unsatisfactory one. The entire existing avifauna of the earth represents probably but the fragmentary remains of avian forms which have existed in preceding geological ages, and the attempt to arrange the some 13,000 species of living birds in accordance with what is believed to be their natural relationships will occupy the systematists for many generations and doubtless never be wholly successful.

In the meantime if the authors of check-lists and local lists will but follow the standard prevailing in the region to which they relate they will win the gratitude of everyone who has occasion to refer to the published results of their labors.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, at 53 Arlington Avenue, Providence, R. I.

HOW AUDUBON SOCIETIES MAY BECOME MORE EFFICIENT

IN these times of reorganization, better organization and higher standards of service, it may not be out of place to inquire whether our Audubon Societies are doing the most effective kinds of work in the most efficient manner.

The Audubon Society of the District of Columbia is reported to be meeting "a situation in which most Audubon Societies fail, by *giving its members something to do*." At first thought, it would seem that the essential requisite for membership in any society ought to be fitness and willingness to do something. This is not the case, however, for numberless members of all sorts of societies consider their duty done when they have paid the annual membership fee. The payment of such a fee, it should be gratefully granted, is a great help, still, dollars and cents can never represent the total efficiency or influence of an organization. In the long run, it is the personal output of effort and interest that counts most in building up public sentiment and establishing higher standards of living.

A small society, with an active membership, generally accomplishes more in a community than a large one, whose membership is represented only by a list of names with an accompanying list of yearly dues, receipts and a faithful Secretary and Treasurer to record the same.

The important question for our Audubon Societies, after all, is not what shall be done with the money contributed in annual fees—there are always ways to use this to advantage—but what shall members be asked *to do individually* to help the work of bird-protection and of educating public sentiment.

Above everything, let something practical be taken up that is within the power of our members to do. It is the right time of year to begin work on bird refuges in city or country. No more practical object-lesson could be offered the public than to have in each community a protected plot where food-houses, lunch-counters, drinking-fountains and nesting-boxes are kept in actual operation for the purpose of attracting and increasing the bird-population. This is a kind of work in which Audubon Societies and schools can act together most advantageously, for while the former organize the project and take the initial responsibility, teachers and scholars can find in it the opportunity for outdoor bird-study so often denied to both by reason of limited time and strength.

A bird refuge must have a trusty warden or guardian of some sort, but if a hired warden is engaged, and everything in connection with the refuge is paid for in money, then it becomes merely an outdoor attraction with the personal element omitted. Such an undertaking is most happily carried on when the children have some part in it under the leadership of efficient Audubon members.

Another practical thing which bird-students can do, and in our Audubon Societies there are many such ones, is to personally assist teachers in active field-work with the scholars. The success of this plan has already been demonstrated in the District of Columbia. Many teachers feel discouraged, naturally, when confronted with the task of conducting large classes into the field. With the assistance of a sympathetic bird-lover, fifteen or even twenty pupils might be taken out without difficulty. Smaller groups are desirable for bird-study but large classes can make observations profitably along other lines of nature-study. Let coöperation and enthusiasm be our watchwords for the coming year!—A. H. W.

FOR TEACHERS AND PUPILS

Exercise V. The Birds' Map of America

Correlated Studies: Spelling, Geography and Grammar

If you have followed out carefully the summer and winter homes of the birds which have been briefly described in Exercises III and IV, you will hardly have failed to notice that quite different kinds of birds find congenial feeding and nesting areas in about the same places. This fact is more striking when one discovers that species belonging to the same family frequently differ more with respect to their distribution than species belonging to widely separated families. Of the Flycatchers that visit North America, for instance, the Acadian or Green-crested Flycatcher is seldom found north of Long Island, southern Ontario, Michigan and central Iowa, and no further west than eastern Nebraska and Texas; while the Olive-sided Flycatcher ranges as far as Cape Breton Island, central Quebec, southern Keewatin and Mackenzie, even into central Alaska, as well as from Michigan eastward, and also, in the west, to southern California, Arizona and western Texas.

The Kingbird, which you will remember belongs to the Flycatcher family, occupies in summer much more nearly the same area as the Red-eyed Vireo and Cowbird than as the Acadian Flycatcher. Or, to take other examples, the Blackpoll and Yellow-throated Warblers seek summer homes quite remote from each other as compared with those of the Blackpoll Warbler and Barn Swallow, or of the Yellow-throated Warbler and Summer Tanager.

The distribution of birds, as well as of all animals and plants, is a great puzzle at best; still, by looking about us, we may learn some things that will

make this matter a little clearer. In our study, so far, we have traveled north and south with the birds to learn the routes which they follow to their summer and winter homes. Let us now take the map of the western hemisphere and look at it from east to west, or west to east. See what a remarkable outline North America has, compared with that of the Eurasian continent of the eastern hemisphere! In the first place, its greatest breadth is in the far north, where the land is covered with snow and ice most of the year, while down near the line of the tropics, where the temperature never reaches the freezing-point, there is very little land. In fact, North America is nearly all water instead of land until one reaches the United States, for the Gulf of Mexico and Caribbean Sea, to say nothing of the great oceans, cut so deeply into its surface.

Notice, in the next place, that most of the lofty mountain ranges and practically all of the dry, treeless places are in the western part of this great continent, whereas the east has most of the large inland bodies of water. You can easily find on the map and name these mountain-ranges, plains and plateaus, and gulfs, lakes and bays. It will be well to spend a few moments in looking up the courses of the great rivers, too, because they play an important part in the birds' map of America. It is a curious fact that many birds never go far west of the Mississippi River, while many others do not come so far east as its borders. Moreover, some of those which frequent the eastern United States stop in their northward journey not far above the Ohio River; others follow up the Hudson and Connecticut River valleys a considerable distance, leaving most of their kind further south; while a variety of birds find a congenial summer home all the way north from Nova Scotia, New Brunswick, Canada, Ontario and Lake Superior northwestward to Alaska. Just why there is such diversity in the distribution of our summer neighbors and spring travelers, it is hard to say, but climate, food-supply and favored nesting-haunts may account for it in part.

Far north, it makes little difference whether one is in Greenland, the Hudson Bay region or northern Alaska, there is almost no vegetation, and always snow, ice and a cold, chilling temperature. On the birds' map this inhospitable expanse is called the Arctic Zone. By circling the North Pole, one would find no change in these conditions, and consequently little difference in the vegetation and animals which seek a home there. The bleakest part of this zone, which is in Greenland, about Hudson, Bay and along the eastern edge of Labrador and Newfoundland, is known as the Barren Ground fauna; that in northern Alaska, as the Alaskan-Alpine fauna.

Perhaps you should know what is meant by the word *fauna*, because it is a word used so frequently in the geography of animals, just as the word *flora* is, in the geography of plants. Fauna means the whole number of animals found in an area where the climate and conditions in general are much the same. Flora means all the kinds of vegetation in a like area. The ancients

believed in gods and goddesses, or nature-deities we might call them, who watched over their gardens, pastures and flocks. The goddess Flora was supposed to protect the plants, while the god Faunus protected the shepherds' flocks, and all the simple forms of agriculture of those early times. In these days we no longer believe in gods and goddesses, but we still use the beautiful names of the ancients in our nature-study. Fauna and flora are not dry, scientific terms at all, but words with a history which tell us a story and at the same time *stand for a definite idea*.

Such plants as the arctic poppy, dwarf willow and some of the saxifrages and gentians belong to the Arctic-Alpine flora. Its fauna may be traced by the presence of the Snowy Owl, the Ptarmigan, polar bear, musk-ox, Arctic fox, lemmings, walruses and some of the seals, and, out in the barren ground, the caribou and reindeer.

Far south of this polar zone, above the timber-line on the loftiest mountain peaks in the United States and Mexico, there may be found similar conditions of cold and scanty life. We may think of these places as arctic islets high up in the air, overhanging a land of warmth and plenty. Where snow and ice and cold give way to trees, the timber-line is said to begin and sub-arctic conditions take the place of polar frigidity. Between latitude 45° and 57° south and east of Hudson Bay and between 50° and 68° west of that great body of water, roughly speaking, extends a timber-zone, sub-arctic to cold-temperate in climate, from which long arms follow south along the great mountain-ranges of the United States as far as Georgia on the Atlantic coast, and Mexico and southern California in the west. Most of Alaska, British Columbia, the territory from Great Bear Lake down through the Great Slave Lake region and Athabasca as far south as the Saskatchewan Plains, and eastward, almost all of the land between the 60th parallel and the Great Lakes region with the exception of southern Ontario and southern Canada, together with the western parts of Labrador and Newfoundland, most of inland New Brunswick and Nova Scotia, and the northern edges of Maine, New Hampshire and Michigan belong to this vast, transcontinental belt. Heavily forested for the most part, the northern part of this zone is covered with spruce and fir, and here, in the so-called Hudsonian fauna, live the woodland caribou, moose, wolverine, and the Rough-legged Hawk, Pine Grosbeak, Northern Shrike, the Great Gray Owl, White-winged Crossbill, and two of our most attractive spring travelers, the White-crowned and Fox Sparrows.

Just as bits of the Arctic-Alpine zone dot the summits of lofty mountains in the United States and Mexico, so the Hudsonian Zone is also found below these frigid islets, where the timber-line begins. In this part of our high mountain-slopes, the hunter looks for the mountain sheep and mountain goat, the coney or pika and Alpine flying-squirrel, as well as the beautiful Evening Grosbeak, Clark's Nutcracker, which is a kind of Crow, and a near but rare relative of the Thrushes, Robins and Bluebirds, Townsend's Solitaire.

The southern part of the vast, boreal zone we are describing contains the Canadian fauna with two others of small extent, one, the Aleutian, the other, the Sitkan, which you can easily locate along the northwestern part of the Pacific coast.

It would take too much space to mention all of the plants and animals which find their most favored habitat in this zone. The lynx, marten and porcupine are familiar species, if not in the field at least in story and menagerie, as well as the Canada Jay, White-throated Sparrow and Myrtle Warblers. Wild berries grow here, such as huckleberries, blackberries and cranberries, for this is the first zone, coming south from the north pole, in which agriculture may be engaged in successfully. The southern part of the Canadian zone, it is needless to say, is by far the most favorable for such crops as white potatoes, beets, hardy apples and cereals.

Right here we may learn two facts, which you have doubtless already guessed, first, that the farther one goes from the poles toward the equator, the greater is the number of kinds of vegetation and animals found; and second, that although in North America the land-areas become smaller and smaller in extent towards the tropics, there is far more diversity in the physiography of the United States, Mexico, the West Indies and Central America than farther north in the zones we have been studying. Our next lesson will tell something of the character of the birds' map from northern United States southward.

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SPELLING EXERCISE

It is suggested that after learning to spell the lists of words given below, the derivation of each word be looked up, plural forms, wherever they occur, be noted and that each pupil be assigned a word to investigate, to the end that at least one interesting fact be reported in the classroom with reference to the word in question, as well as its grammatical significance.

Geographical	Scientific	General	Birds and Plants
Connecticut	species	vegetation	tanager
Eurasian	continent	traveled	saxifrage
Caribbean	temperature	inhospitable	gentian
Mississippi	arid	agriculture	ptarmigan
Labrador	plateau	goddess	musk-ox
Columbia	climate	scientific	lemming
Athabasca	fauna	territory	caribou
*Saskatchewan	flora	transcontinental	reindeer
Nova Scotia	latitude	parallel	wolverine
Mendocino	boreal	distribution	coney
Aleutian	physiography	congenial	marten
Sitka	tropic	similar	cereal
Ontario	habitat	separate	walrus

*Saskatchewan is sometimes spelled Saskatchewan. Which form is correct? Name your authority.
A. H. W.

FROM YOUNG OBSERVERS

Bird Notes from the Minnesota State Training School for Boys

Last May, while watching some Tennessee Warblers that were picking worms from under the curled up leaves of a snowball bush across the driveway, we were startled by a bird dashing against the window-pane and then either dropping to the ground or flying away. We wondered what could have been the cause of his reckless flight, but were more interested just then in the Tennessee Warblers than in the bird that had met with disaster.

On turning again to the bush to watch the Warblers, we noticed a female Baltimore Oriole which was calling in a low, sweet voice from the snowball bush, a sort of a crooning call, never heard from an Oriole until now, and at first we did not realize that it was the Oriole calling. Remembering the bird that struck the window-pane, we stepped out-of-doors, and there, beneath the window, was the male Oriole, dead.

One beautiful day in June, we noticed a little performance which proved that the Kingbird is either a tyrant as his name (*Tyrannus tyrannus*) implies, or else he is mischievous and likes to tease.

We were seated on one of the steps leading down to a stretch of sand along the banks of the Mississippi River. Just at the foot of the flight of stairs is an old scrub oak, and close beside this a basswood tree.

At the end of one of the branches of the scrub oak was a clump of foliage and a network of small branches that made an ideal spot for a nest. A Cedar Waxwing had evidently seen the advantages of the location for ends of twine were hanging from the branches, and, as we looked, a Waxwing appeared in sight and seized one end of the string. Just then a Kingbird swooped down from some elevation back of us, and the Waxwing, in a dignified manner, retreated to the dense foliage lower down the tree, and remained there. The

Kingbird seemed to have a great deal of curiosity in regard to this nest-building, for he flew under the clump of foliage, then alighted beside it, and finally settled down into the cup-shaped place where the Waxwing had begun the nest. Having fully satisfied his curiosity, he departed, and was no sooner gone than the Waxwing reappeared and again took up the thread. Mr. Tyrannus, however, was not far away, and had evidently been keeping his eye on the spot, for down he swooped, as before, and put a stop to the proceedings.

The difference between the two birds was very noticeable, the Kingbird so aggressive and impetuous, the Waxwing so retiring and gentle, yet both so insistent. The little by-play was kept up for several successive rounds, the Kingbird swooping down from his perch above, the Waxwing coming up in a quiet mouselike manner from the branches below.

As soon as one left the other appeared. Finally the Kingbird decided to perch right on the spot, deeming, no doubt, that "possession was nine points of the law." He sat bolt upright beside the nest for fully fifteen minutes, and then flew away. By this time the Waxwing had undoubtedly decided that life was too short to waste any more time wrangling over a building-site when the neighborhood was full of others just as good.

We remained for some time watching the spot but neither bird returned.

From the same observation point we witnessed a scene in which the actors were a pair of Maryland Yellow-throats and a turtle.

We first noticed the turtle crawling up from the stretch of sand. As it neared the shrubbery it would stretch out its neck, and lift its head as if listening. At the base of the basswood tree was a tangle of new shoots, and as the turtle pushed his way through them, a dry twig snapped, and immediately there appeared overhead in the branches of the basswood, a Maryland Yellow-throat, the female. She seemed very much worried about the advancing turtle and gave a little call, which brought the male to her side at once. Both birds hopped from branch to branch over the place where the turtle had stopped, but they did not utter a sound. Whether the turtle saw me, or for some other reason changed his mind, I do not know, but he turned and slowly crawled back to the river. When certain that the danger was over, the Yellow-throats dropped to the ground and disappeared for awhile. They take such a roundabout way of getting to their nests that it is difficult to follow them. We remained perfectly still and soon heard the *chack, quit, quit* of the male as he hopped in and out among the weeds and low bushes. The female flew from a low bush to some weeds nearer the river, and we watched very closely the neighborhood of the bush until she returned. She alighted, first on the bush about two yards from the nest, then flew to the ground, and winding back and forth, came nearer and nearer to where I thought the nest was located. She was perfectly quiet, uttering no sound, but the male was keeping up his little *quit, quit*. As the bushes were somewhat scattered and the weeds not so very

thick, we could keep track of the mother bird and caught glimpses of her now and then until she reached the nest. When she again left the nest we went over and gently parted the high weeds, and there, about an inch from the ground, in a little cluster of woody weeds, was the nest, sure enough, with three young birdies, in the stage where they appear to be all mouth.

[These entertaining and carefully reported observations were sent from Red Wing, Minn., by the Principal of the State Training School for Boys, with the thought that they "might be of interest to the readers of BIRD-LORE." He writes: "Our school is situated on the banks of the Mississippi River about fifty miles below St. Paul. We have such a number of birds in our vicinity and we get the migrating birds of the Mississippi Valley in the spring and fall."]

Anyone who has had the good fortune to study nature in this region knows the wealth of its bird-life as compared with many other sections of the United States. The incident of the turtle calls to mind the experience of a duck-breeder who finds that not only snakes but also frogs and green turtles molest his ducklings. Other observers have had more discouraging experiences in searching for the nest of the Maryland Yellow-throat, than the one described above. This bird is one of the slyest and most elusive creatures to follow. The writer, with a trained associate, spent a fruitless half-hour during July, trying to locate the destination of a male Yellow-throat which was on its way to the nest, with food in its mouth. We shall hope to hear from this school again.—A. H. W.]

A Little Story About the Mockingbird

A pair of Mockingbirds built a nest in some roses on my friend's veranda. When the nest was completed, one egg was laid each day, but with two eggs in the nest, the female began sitting. I am certain that no one took any eggs, for on the third day after the nest was completed it was under the close observation of my friend.—MAURICE B. EMMICH (Aged 11 years), *Vicksburg, Miss.*

A Sparrow and a Dragon-fly

While walking in New York, I saw an English Sparrow with a dead dragon-fly. The dragon-fly was a very large one. It was fully as large as the Sparrow. I do not know if he killed it himself or found it dead.—PENDLETON MARSHALL, *New York City.*

[Brief as the above notes are, they show that both of these young observers saw a few points clearly and reported them truthfully. This is the way to get at the secrets of nature. Older observers have been severely criticized for making too much out of what they imagined they had seen in the field. Imagination is a fine gift, but let all of us beware of confusing what we actually see and hear in nature with what we would like to see and hear.—A. H. W.]

NOTE

Read *Wheatear* for Wheateater in the July-August issue of Bird-Lore, page 245.

FROM ADULT OBSERVERS

The First Record of the Mockingbird Nesting in Rhode Island

On April 7, 1911, a single bird was seen, but not close enough for identification. On April 19 it was seen more closely and for three days following, and on account of its song it was identified as a male Mockingbird. On April 24 two birds were seen, and from that date until the last of June they were observed almost daily. Their nest was located, about the middle of May, in a spruce tree, some fifty feet from a private residence surrounded by rather spacious grounds, a quarter of a mile from Hampden Meadows Station. The nest was large and untidily built, and contained four eggs. Only three young birds were known to hatch out. The birds stayed near the place of nesting, and seemed inclined to quarrel with other birds. In the spring the song of the male was rather unsatisfactory and unpleasant, but in the fall it was of a far finer quality. Early in September the adults and three young were seen every day. September 20 was the last date when more than one individual was seen. The male stayed until October 21. A few days after, the male and female reappeared, and were seen daily about the grounds and in the privet hedge. They made very little noise, and seemed to be contented to come out about the hen-yard and about the bushes that had withered berries on them. February 8 they were still in the vicinity. The family owning the grounds near which they nested fed them all winter, and they were very friendly. January 30, one of them flew out of the swamp, about a quarter of a mile from where the nest was, toward the house.—BERTHA B. SMITH, *Barrington, R. I.*

[This interesting and unusual record is published through the kindness of the teacher whose observations are given above. The movements of this family of Mockingbirds have been followed eagerly by bird-lovers, and it was hoped that the parent birds would remain to nest this season. Only one has been seen in Barrington since late in the winter, but, very early in April, one bird, judged to be a male by its song, appeared in the grounds of Mr. John R. Freeman, well within the limits of the city of Providence. Here it was heard or seen daily until April 26, when it disappeared. If unmolested by cats or other enemies, it is hoped that the whereabouts of these Mockingbirds may be reported by interested observers. So far as known, the above nesting-record is the first for this species in Rhode Island.

Under date of May 20, 1912, Miss Smith writes further: "The Mockingbird (male) is still in Barrington, but we have been unable to discover any other individuals this spring. Of the three that were hatched last spring, only one was with the parent birds in the fall. All three were seen late in November, and then for a few weeks they disappeared. The male returned and stayed all winter. This spring I have made careful search and inquiries, but find only one bird. He does not seem to be very busy nor very lonely, and has made friends with the people in whose grounds he is located.—A. H. W.]

The Nuthatch Brothers

By GARRETT NEWKIRK

Mr. W. B. (White-breasted)

Head up or head down,
Like a jolly old clown;
In and out,
Quick about,
With many a prank,
And a laughing "Quank-Quank."

Then hunting for food
In the bark or the moss;
And who do you think
Clipped his tail,
With the shears,
Straight across?

With a cut-away coat
And a broad white vest,
And a high standing collar,
He is always well dressed.

Mr. R. B. (Red-breasted)

And his brother, R. B.
Sometimes you may see,
Though he often stays North
Where he loves a pine tree.
Whether upper or under
Along a big limb,
With head up or down,
Any way pleases him.

If he'll keep still a second,
No doubt you may spy
A long whitish line,
Just over his eye.
And both of these
Brothers
Are friends of the trees,
With catching of slugs
Where they bore in the dark,
And thousands of bugs,
Just under the bark.

If trees could use words,
No doubt they would say,
"How we love the dear birds,—
Protect them, we pray."



THE CALIFORNIA QUAIL

By JOSEPH MAILLIARD

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 58

The California Quail—using this name for the two subspecies we have in the state—is one of the most interesting, and also most commonly met with, of the birds of California.

Along the more rainy and damper coast-belt, the Quail is of a darker hue and larger form; while, in the dryer interior and in the deserts, where the sun shines nearly every day in the year, and often shines intensely, it is somewhat smaller and paler. The darker bird is called the California Quail, and the paler one the Valley Quail.

The range of one or the other of these 'races' or 'subspecies' extends from north to south, from east to west, except at the higher elevations, almost throughout the state. From the lesser mountains of northern California to the waste areas of the southern deserts, from the wave-washed cliffs of the western seacoast to the foothills of the snow-capped Sierras, it varies in abundance, it is true; but it is to be seen and heard amid the rocks and cactus of the Colorado desert, where it thrives in friendly contest with its cousin, Gambel's Quail, among the vast sagebrush areas of central and southern California, on the plains in the great valleys where green stretches of alfalfa are a striking contrast to the fields of golden grain waving in the summer breeze, in the live oak and chaparral-covered hills nearer the coast, or among the foothills of the Sierra Nevadas, up to a height of three or four thousand feet. In fact, wherever there is a little water to drink, a sheltered place to roost at night, and grain or grass seeds for food, one is apt to come across this species. And it is a bird worth meeting!

Always sleek and well-groomed, except when molting, with an air of sedate but active respectability, quick as a flash when danger threatens, the male, with his richer coloring and gracefully curved head-plumes, seems ever proud as he marches about, or runs swiftly along in search of food, while his consort follows meekly in her more quiet garb.

The Quail has several very distinct and differently used notes and calls. The most commonly noticed call is really more like a rooster's crow than a song, and is easily imitated by a child, a woman, or even by a man, if he has a good falsetto, and sounds something like *ka-ka-kao*, which is interpreted by various human beings to suit their fancy. Some claim that Mr. Quail says, "Put that down!" others that he distinctly means, "Cut it out!" while the hunters know that he says, "You go 'way!" But this call is given only when he feels happy. There is a varia-



CALIFORNIA PARTRIDGE

Order—CALLINÆ

Family—ODONTOPHORIDÆ

Genus—LOPHORTYX

Species—CALIFORNICA

National Association of Audubon Societies

Educational Leaflet No. 58

tion to it, given with the same notes, but with a very different accent, that sounds like "ku-ku-kul" with the accent strongly on the second note, and the last note faint. This means some sort of warning to the flock. It is not the real danger signal, but is a sort of notice from the lookouts to be on guard, and, after a flock has been scattered, is used as well for a call signal to collect again, separated birds calling to each other from quite a distance.

The real danger signal is very different, and sounds like *dst-dst-dst*, (drawing in the air or breath). Both male and female repeat this very rapidly several times with a falling inflection, and when this danger call is sounded excitedly, the whole flock runs to cover. There is also a sort of twittering that the Quail make, either after a flock has been scattered and is collecting again, or in the early mornings when the birds come down from the night's roost, and are getting together and deciding where they will have their breakfast. This is a subdued but very pleasant sound, and seems to be in the way of friendly greeting.

In the nesting season the male also utters a single call, which is like the last note of the *crowing* call, first mentioned. In early spring the Quail are to be found mostly in pairs. Later, when the nesting season commences, the male takes his stand upon bush, rock, stump, post, or any good vantage point, and gives voice to this single call, repeated at frequent intervals and loud enough to be heard quite a distance. Whether this note is one of encouragement to his sitting spouse, or whether given to show how good it feels to be alive in the springtime, we cannot know; but in our California spring it is a most characteristic sound.

A Quail's nest, if it may be so called, is a most interesting sight. Usually it is but a mere hollow in the ground, perhaps with a little dried grass, or a very few feathers, as an excuse for a lining, with advantage taken
Nest of a stone, shrub, or tuft of grass to help conceal it. It is seldom found, except when the startled mother flies up from almost under one's feet when one nearly steps on her.

The number of eggs varies greatly, and sometimes there are so many that the little hollow is almost overflowing with them. As high as thirty-one have been found in a nest by the writer, but the usual number is from
Eggs fifteen to twenty. It seems as if there must be more than one bird laying, in the case of the very large sets, and it is often easy to separate a set into two or three distinct types of marking and shades, indicating that different females were responsible for the different types of eggs.

The groundwork of the eggs is of a creamy white, while the markings are irregular spots and blotches of a color from old gold to brown. Some eggs are heavily marked, while others are nearly white. It is a very singular thing that if the eggs are disturbed by a person—even if only touched by one finger—the nest is almost always deserted. One may step within a few inches of a nest and frighten the bird away, not only once but several times, and still the bird

will come back. But disturb the eggs ever so slightly—pick up an egg and put it back as near as possible just as it was before—and the next time you go to look at the nest the eggs are cold, the nest deserted, and possibly robbed by some jay, snake, or four-footed creature. This is unfortunate, because Quail often select places for their nests near houses or on cultivated lands. The writer remembers one nest made under the edge of a one-horse treadmill that was used every day to churn butter. The poor Quail was frightened away several times each day, and of course stayed away when the horse was doing the churning, but she laid something like eight eggs before becoming sufficiently discouraged to leave.

Very rarely one will find a Quail's nest in which the eggs are just hatching, and the young have such an instinct for hiding at the least alarm that on such an occasion they will actually run to cover with half of the egg-shell still clinging to their backs! The tiny youngsters give a little weak-voiced *peep* or two, and then all is quiet. They would be stepped on and crushed before they would make their hiding-place known! They run about in a most lively way by the time they are two or three days old, and are often to be seen along the less-frequented roads in summer time.

Like chickens, the Quail love to scratch in the dust, and a dusty road, without *too* many passers-by, is a strong attraction for them. It is a pretty sight to see the old ones leading the broods in such places, stopping to pick up seeds here and there, with their head-plumes bobbing each time they give a peck at a seed, wallowing in the dust now and again, but ever with a watchful eye for danger; while the youngsters run hither and thither, now scattering a little, then closing up again, at a warning from the old ones, covering the dust with the tracks of their little feet, and gradually working their way along the road for often a hundred yards or so before sufficiently disturbed to take to cover.

Each flock of Quail has its own special domain, and never wanders far away; and in the summertime, before the birds are made wild by the opening of the shooting-season, any one passing often over a road early in the morning, or late in the afternoon, may see the same flock again and again, and watch the youngsters grow. While the Quail scatter out in pairs in the nesting season, and keep their broods separate for a little time when still very young, they soon commence to band together; and where they are plentiful the bands become larger and larger as fall approaches, until, in places, they number hundreds in a flock. But in the more thickly settled country, where every man's and boy's hand is against them, they are sadly diminishing, and one may find only a small band of ten or twelve living near a spring where he used to see a hundred.

While the California Quail is very wary in some ways, it often takes up its abode in the vicinity of houses, and even in cities where there are gardens with shrubbery. Unlike the eastern Quail—the Bobwhite, that is—which

spends the night on the ground the California Quail invariably roosts in bushes or trees, and, where there is a dense hedge in a garden, they sometimes take possession of the premises, and even walk around the porches of houses where protected from marauders. But let anyone try to get near them, and off they go, with their peculiar whirring of the wings. This bird can be more or less domesticated by keeping it in an enclosed place, and sometimes it nests in confinement, but it seldom gets really tame.

In some parts of the state, especially in the southern interior, the Quail will run long distances, instead of flying, when disturbed by the hunter—as far as half a mile, often, and a flock of perhaps a hundred or so will in this way apparently disappear from the face of the earth. In the more wooded parts they fly into trees, where they manage to hide themselves in such a manner that it is almost impossible to see them; while, if you do happen to get your eye on one, he seems to know it on the instant, and is off like a shot. Their power of concealment is remarkable under any circumstances. Even on the barest sort of ground, where perhaps a dry season has allowed of but little growth of grass, and that little has been gnawed off by the hungry cattle until only a few shreds of fine straw lie on the ground, the Quail will take advantage of a little hollow no bigger than the palm of one's hand, or a stick, bit of stone, anything at all, and become invisible. The practised eye of the most experienced hunter can but seldom pick one out unless he has seen the bird actually settling down into place or making some slight move, so well does the protective coloration blend with the surrounding objects.

The California Quail does not eat many harmful insects, but is of much benefit as a destroyer of weed seeds. It is fond of grain, and at times may scratch up and eat a little in a sown grainfield, before and after the grain has sprouted; but even then it is eating a lot of weed seeds as well, and, while it does some damage in certain places and at certain times, it does much good in other places and at other times of year. When present in large numbers, it will eat a lot of grain that has fallen on the ground after harvest, and which would be picked up by hogs or sheep in the usual method of farming, but it does very little damage to the standing grain.

The principal complaint against the Quail is from the vineyard men. The bird seems to delight in vineyards, and often large flocks will take up their abode therein, possibly as much for the cover and protection from hawks as for the fruit itself. Whichever it is, the result is that many grapes are pecked as they ripen, when the "yellow-jackets" (a kind of wasp) begin work at the opening made by the Quail, and soon leave nothing but the empty skin. There may be only a few pecked on a bunch, but it injures the value and weight of it. It seems as if the Quail do more injury in the way of this pecking at the grapes than by eating them whole, though they do both. However, it is more than likely that other birds do a good deal of the damage that the poor Quail is blamed for.

THE WHITE-BREASTED AND RED-BREASTED NUTHATCHES

By FRANCIS H. ALLEN

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 59

Habits The Nuthatches are called, I believe, in some places, or by some persons, "Devil Downheads." There is, indeed, something eerie about these little birds with their quaint form and queer ways, but I should much prefer to call them elves rather than devils. That quaint form is closely correlated with the queer ways. If a bird wants to hop down a tree-trunk as well as up it, he must dispense with the use of his tail as a support and must depend entirely upon his two feet, and to balance himself properly not only must the feet be strong, the hind toe long, and the claws sharp and hooked, but the whole bird must be made as short and compact as Nature can make it. Now the Nuthatch needs a fairly long bill to poke into the crevices of the bark for his insect food and a fairly stout one to pry off the chips and dig it out, so that the economy in length must be in his neck and his tail. And here we have our bird, as Nature has made him and as Mr. Brasher has drawn him,—a short, squat figure, with almost no neck and with a tail only long enough to balance his bill and steady him in flight, but with capable feet and a serviceable bill.

But why *should* a bird wish to travel downwards on a tree-trunk? To get his daily bread in the way that seems most natural and easy to him. Evidently the Nuthatch is filling a gap in nature. He would not have adopted so unusual a method of feeding if it had not stood him in good stead. I suspect that by approaching his prey from above he detects insects and insect-eggs in the crevices of the bark which would be hidden from another point of view. The Woodpeckers and the Creepers can take care of the rest. Of course these other birds get something of a downward view as they bend their heads forward, but the Nuthatch has the advantage of seeing some insects before he gets to them which even the Creeper's gentle approach would scare into closer hiding.

Notes To most of us in the northeastern states *the* Nuthatch is the WHITE-BREASTED NUTHATCH, and we know him best as a welcome pensioner on our winter bounty and an industrious gleaner of insect food from the trunks and branches of the leafless trees in autumn, winter, and early spring. We love his familiar unmusical notes, which seem so friendly to us, perhaps because they really express an unusual appreciation of the companionship of his kind. The most striking of these is the one commonly interpreted as *quank*. To my ear, however, though nasal,



WHITE-BREASTED NUTHATCH. UPPER FIGURES, MALE AND FEMALE
 RED-BREASTED NUTHATCH. LOWER FIGURES, MALE AND FEMALE

Order—PASSERES
 Genus—SITTA

Family—SITTIDÆ
 Species—CAROLINENSIS AND CANADENSIS

it has nothing of the *nk* in it, while it has a distinct r-like quaver. It may be rendered as *pr-r-ääp*, sounded through the nose. Another note, reserved for closer companionship, or soliloquy, is like the syllable *tüt*, pronounced as in German, very short and slight, and repeated irregularly and indefinitely.

The home life of the White-breasted Nuthatch is not so well known to most of us as his winter ways, because he is rather retiring during the nesting-season, preferring the woods with a growth of large oaks or other hardwood trees to the neighborhood of human habitations. The spring song, however, begins before the bird leaves his winter haunts. It resembles the familiar laugh of the Flicker but is not nearly so loud and is rather more pleasing in tone. It consists of eight or ten repetitions of a single syllable, —*what-what-what-what-what-what-what-what*, or *ha-ha-ha-ha*, etc.,—less nasal and more liquid in quality than the call-note.

The nest, which is placed in a hole in a tree or some similar situation, is prepared in March or April according to locality.

The hole is usually a natural one in a decayed part of a living tree or in a dead tree or stub. It is enlarged and shaped by the birds, both sexes working together. The lining is made of such materials as feathers, hair, fur, bark-strips, and leaves, loosely thrown together. From six to nine eggs are laid. These are white or cream-white, thickly and uniformly spotted with reddish brown and lavender.

The male White-breasted Nuthatch is a particularly devoted husband. He carries food to his sitting mate, calling her to the mouth of the nesting-hole to receive it. At other times of the year, too, the pair keep together faithfully, hunting their food in close proximity to each other and keeping up a continuous conversation of *pr-r-ääps* and *tüt-tüts*.

The Nuthatch has a stout bill and a strong gizzard, and when he finds his insect food scarce he ekes out his subsistence with seeds and nuts. The habit of hatching, or hacking, chestnuts, beechnuts, acorns, and similar soft-shelled nuts, has given his kind its name of Nuthatch. The nut is wedged into a crevice to hold it while the bird hammers it open. Another interesting habit of this and the related species is that of hiding nuts in cracks and crevices in the bark of trees and such situations, presumably for the purpose of keeping them safe for future use. This vegetable food, however, seems to form a comparatively small part of the White-breasted Nuthatch's diet. Mr. E. H. Forbush, one of the latest authorities to write on the economic status of this bird, regards it as a valuable species from that point of view. It feeds largely on beetles, including the boring beetles, on scale insects, and on many hibernating larvæ and pupæ as well as insect eggs. Ants and spiders are also eaten, and canker-worms, forest caterpillars, and plant-lice. One pair in Brookline, Mass., was seen to search beneath the burlap bands for the caterpillars of the gypsy moth, which they fed to their young in large numbers.

I have this minute been watching a pair of these Nuthatches feeding in my apple and pear trees. They traveled restlessly up and down and around the trunk and branches, never proceeding very far in a straight line and stopping at every few hops to dig out a grub, hammering like a Woodpecker and making the chips of bark fly. When in a precarious position on the under side of a limb the bird held himself by keeping his legs stretched far apart and his claws firmly anchored to the rough bark, the large hooked hind claw apparently doing most of the work. The birds kept up a lively conversation as they worked. Now and then they looked off while clinging head downwards, assuming that quaint posture so characteristic of their kind. Finally they flew away, one after the other, with a whirl of the wings and an undulating flight, and I have returned to my desk by the window.

Though the breeding-range of the White-breasted Nuthatch is practically coincident with its entire range, it seems to be largely migratory in its habits, and probably breeds most numerous in the northern part and does not winter in any numbers much farther north than Massachusetts. In most parts of New England it appears to be most common as a migrant.

To those who know it, in its breeding-haunts or elsewhere,
Notes the RED-BREASTED NUTHATCH is dear out of all proportion to its size and its musical attainments. It is livelier than its big cousin and prettier in its markings, and there is something particularly fetching about its quaint little form. It is even less of a songster than the white-breasted species, for prolongations and repetitions of its call-note seem to be all it has that can pass for a song. This call-note can be rendered as *āāp*. It is nasal like that of the White-breasted Nuthatch but usually identified, being much higher pitched and more drawling and lacking the *r*. It has been happily likened to the sound of a tiny trumpet or tin horn.

The habits of the Red-breasted Nuthatch are so like those
Habits of the White-breasted that much that I have said about that species is applicable to this. The most striking difference is in the favorite haunts of the two birds, the Red-breasted preferring the coniferous woods, or mixed woods that contain a large proportion of conifers. In those winters when they are found in southern New England they come freely to the neighborhood of man's dwellings and feed familiarly on the supplies provided for the winter birds, but even here they show their partiality for coniferous trees. They are particularly fond of the seeds of pines and spruces, which form a large proportion of their diet, so that they are much more vegetarian in their habits than their white-breasted cousins. They have the same habit of hiding their food in cracks and crevices.

This Nuthatch does eat insect food, however, and may
Food often be seen hopping up and down the trunks and over the branches of trees. It feeds among the small branches and twigs more than its cousin, and according to W. B. Barrows, in his 'Michigan Bird

Life,' is often seen investigating tufts of dead leaves in deciduous trees. If this latter habit is a well-developed one, the bird should be useful in destroying nests of the brown-tail moth. Mr. Forbush records it as an enemy of the gypsy moth.

Nest The Red-breasted Nuthatch excavates its nesting-hole usually in dead or partly decayed trees. Mr. O. W. Knight, in 'Birds of Maine,' says that a balsam fir stub is the favorite tree for the purpose, one with punky wood but bark still clinging. In other cases poplar trees and birches are chosen, but the locality is usually in coniferous woods, or at least in woods where conifers abound. Both sexes work at the excavation. The hole is usually lined with finely shredded bark or wood fibers and perhaps soft grasses or feathers. The eggs are from four to six in number, white or cream-white and speckled with reddish brown and lavender. The most remarkable and characteristic thing about the nest is that the entrance-hole is invariably surrounded by a ring of pitch brought from a neighboring spruce, pine or balsam fir. It has been suggested that this may be a protection against ants or mice. Whatever its purpose, the habit is an interesting one and unique so far as our native birds are concerned.

Range Unlike the White-breasted Nuthatch, which is represented by another race in the West, the red-breasted species is the same bird the whole country over. It breeds in the Canadian fauna and winters from southern Canada to Lower California, New Mexico, Arizona, and the Gulf Coast. Its migrations are irregular and largely dependent on the cone crop in the forests where it breeds. If the cones are abundant in the White Mountains, for instance, the Red-breasted Nuthatches of that region remain there for the winter. If, however, the crop is a failure, as, not infrequently happens, the birds go south in late summer and early autumn. When they migrate south they are rather apt to go beyond southern New England, so that in such years they are much more abundant in Massachusetts in the early fall than later. The woods of central and southern New Hampshire are sometimes fairly swarming with these birds in early autumn.

One interesting habit that this bird has in connection with its migration is the curious one of dropping down on ships at sea. Birds of many kinds occasionally alight on ships far away from land, but no other, I think, so habitually as the Red-breasted Nuthatch. It may be seen on such occasions traveling in its characteristic fashion up and down the masts and shrouds and even alighting on the hats and clothing of persons on deck. Red-breasted Nuthatches are also not infrequently found climbing over the rocks on the seashore or on islands off-shore. I suspect that these little birds, not accustomed to long flights, on finding themselves far from land, are glad to drop down anywhere, on anything that promises to give them a foothold and a prospect of rest and food. They show their adaptability by making the best of things wherever they find themselves, and on sea, as on land, they win the hearts of men.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City

THEODORE S. PALMER, <i>First Vice-President</i>	WILLIAM DUTCHER, <i>President</i>	T. GILBERT PEARSON, <i>Secretary</i>
F. A. LUCAS, <i>Second Vice-President</i>		JONATHAN DWIGHT, JR., <i>Treasurer</i>

Any person, club, school or company in sympathy with the objects of this Association may become a member, and all are welcome.

Classes of Membership in the National Association of Audubon Societies for the Protection of Wild Birds and Animals:

\$5.00 annually pays for a Sustaining Membership
\$100.00 paid at one time constitutes a Life Membership
\$1,000.00 constitutes a person a Patron
\$5,000.00 constitutes a person a Founder
\$25,000.00 constitutes a person a Benefactor

President Dutcher

Mr. Dutcher's condition remains unchanged. On October 19, 1912, two years will have passed since he was visited by the illness which left him speechless and practically helpless. With marvelous fortitude he has patiently born an affliction to which most men would have succumbed, and at no time has he lost interest in the progress of the work which he inaugurated, and its continued development has been one of his main sources of pleasure.

Notice to Members

The regular annual meeting of the National Association of Audubon Societies will be held on Tuesday, October 29, 1912, in the Museum of Natural History, West 77th Street, New York City. The notices called for by the by-laws will be mailed to all members of the Association within the statutory time limit.

The past year having been one of the most active that the Association has ever experienced, it is believed that the reports presented at the meeting will be of peculiar interest.

We hope that all members will bear in mind the date of the meeting and make every effort to be present.

T. GILBERT PEARSON, *Secretary*.

James Buckland

Mr. James Buckland, of the Royal Colonial Institute of London, the indomitable English bird protectionist, has won his first real victory in the struggle to obtain the passage of the Plumage Bill now pending in Parliament; it has passed its first reading by a majority of 328 to 48.

For many years Mr. Buckland has been devoting a large part of his time to arousing public sentiment in Great Britain to the necessity of suppressing the traffic in the feathers of wild birds, especially those which have been shipped illegally and otherwise from the various British dependencies. He has prepared and distributed numerous addresses to the people, and has lectured with great frequency on the evils of the plumage trade.

In a recent "appeal to the public to support the Plumage Bill," Mr. Buckland gives the following reasons why, to his mind, this measure should be enacted:

"1. Because Nature has been at work millions of years creating these marvelous pieces of mechanism and beauty which today are being destroyed utterly because woman is unable to make their beauty a subject of thought but as it has to do with the bedecking of herself.

"2. Because plumage, to be of value to the trade, must be obtained during the breeding season. The only way by which

it can be obtained is to kill the bird. The parent bird being killed, the young perish miserably of starvation.

"3. Because this means that those wild birds whose plumage is used in millinery are being killed faster than they breed.

"4. Because every sensible person knows that to kill a species faster than it breeds means extermination.

"5. Because the very thought of the fiendish cruelties which must characterize a trade that depends for its profits on killing the parent bird when carrying food to its young is repugnant to all but brutal minds.

"6. Because economic, if not sentimental, reasons should lead all truly patriotic and far-seeing Englishmen to do everything within their power to check the wanton destruction of the wild bird life of the Colonies.

"7. Because it can be clearly demonstrated that the appalling human mortality in Uganda, and the havoc which is being wrought among the live stock, are due in great part to the destruction of native birds for their plumage. There is no longer in Uganda a sufficient number of the natural enemies of the venomous tsetse fly, and of parasitic insects, to keep these plagues in check.

"8. Because the destruction of wading birds for their plumage in South Australia is causing a decline in the fish resources of that State. As these birds grow fewer in numbers, so do the crustaceans, on which they feed, and which, in their turn, feed on the fish spawn, increase in hosts.

"9. Because the Bombay Chamber of Commerce, when approached by a Section of the London Chamber of Commerce with the request that the Act which prohibited the export of plumage from British India should be repealed, pointed out in their reply that it was a recognized fact that crops of all kinds were subjected to incalculable damage by insect pests; that the combating of this evil was one of the greatest difficulties of the Indian agriculturist; that the principal natural enemies of these pests were the insectivorous birds; and that these

were the very species that were being relentlessly slaughtered for their plumage.

"10. Because the Melbourne Chamber of Commerce, in replying to the same Section of the London Chamber of Commerce, which had submitted to the consideration of the Melbourne Chamber a book which sought to justify the traffic in plumage, said that the work performed annually by the wild birds in keeping in check the ravages of myriads of noxious insects was worth many millions of pounds sterling to the Commonwealth. Were the birds destroyed, Nature would become unbalanced, and successful agriculture become impossible.

"11. Because the self-governing Dominions, alarmed at the continued and ruthless slaughter for their plumage of their insectivorous and rodent-eating birds, last year petitioned the Home Government to close the ports of Great Britain to plumage illicitly exported from the Dominions.

"12. Because no real notice has been taken of this petition or of these warnings.

"13. Because it is not only a crime, but an insensate blunder, for the British Government to allow the profits of a few London feather dealers to be obtained at a loss to the agricultural interests of the Colonies. Whatever is detrimental to the agricultural interests of the Colonies must tend in the long run to injure Great Britain.

"14. Because labor—even if this argument could be raised as an excuse for dealing in the property of others—derives no benefit from the traffic in contraband feathers. These feathers are for the most part used in their natural state, little or no manipulation being required to adapt them to millinery purposes. If these illicit feathers were excluded from our markets, many people would find employment in the manufacture of substitutes from the more common feathers.

"15. Because the armoury of the British Government is destitute of all weapons by which the illegal traffic in the plumage of the birds of the Colonies can be defended. It has never even attempted to



MR. JAMES BUCKLAND, THE ENGLISH BIRD PROTECTIONIST
Photograph by J. Russell and Son, London

show the need for trading in smuggled goods; the moral justification of it; or the benefit to the laboring classes of this country which flows from it.

"16. Because, if a Plumage Bill were passed in this country, it would make it easy for those who are doing a voluntary work of inestimable value to the Empire to procure the passage of similar Bills in other European Parliaments. As it is, the vicious example set by Great Britain paralyzes every effort in that direction."

Surely no one can read the above arguments for the passage of this measure without being impressed with the worthiness of the Bill and the necessity for its enactment. There are among the readers of *BIRD-LORE* many people who have influence in England, and we earnestly urge, if this article comes to their attention, that they will at once seek to bring pressure to bear on the Members of Parliament and urge its final passage.

Besides his work for the protection of the birds of England and the English Colonies, Mr. Buckland's labors have extended to many other countries. Largely as a result of his personal visits to Germany and his constant communications with bird students there, that country today has one of the most wide-awake national bird-protective organizations to be found in the Eastern Hemisphere. His work is well known in France and at the present time he is assisting in carrying forward a very important bird-protective movement in Holland. He is equally interested in the protection of American bird life, and the information that he has gathered and made public relative to the destruction of birds in South America has been of great assistance to bird protectionists in that country and elsewhere.

Mr. William Dutcher, President of this Association, has long regarded Mr. Buckland as one of the very strongest men connected with the wild life protection of the world. For many years they were in constant and close correspondence, and since the beginning of Mr. Dutcher's unfortunate illness, the writer has had

the pleasure of continuing this correspondence, and has thus been kept in close touch with the wonderful results which Mr. Buckland's efforts have secured throughout the world. It was by the combined efforts of Mr. Dutcher and Mr. Buckland that the International Committee for Bird Protection was called into existence upon the occasion of the meeting of the International Ornithological Congress, held in Berlin in the summer of 1910.

When we recall the marvelous amount of work done by this remarkable man, the results seem tremendously impressive, especially in view of the fact that he is not an official, nor connected with any organization for bird protection—that he does not even have a secretary and that all his correspondence is written with his own hand.

Mr. Buckland came of Devonshire stock and on the seventh of this October will be fifty-eight years of age.—T. GILBERT PEARSON.

Game Commissioners' Meeting

The National Association of Game Commissioners met in Denver, Colo., Aug. 31–Sept. 1, 1912. This Association was organized in the Yellowstone Park in the summer of 1902 and has had bi-annual meetings ever since.

This was in many respects the most interesting gathering of game officials which has yet taken place. One very striking feature was the amount of stress laid on the importance of propagating the wild birds and animals, both by natural and artificial means. In fact, discussion of various phases of this subject occupied far more time in the session than the subject of enforcing the bird and game laws, which at the meetings heretofore have been the dominating topic.

Among other matters which prominently came before the Association was the question of the desirability of having the game laws in the various states uniform with each other. Without a dissenting vote, however, the Association voted this plan as impracticable.

On the matter of having the various states uniformly adopt the New York Plumage Law, however, there was only one opinion, namely that such a course would be exceedingly wise and desirable.

In reference to the propagation of wild life, three illustrated addresses were given. These were presented by Mr. Kelly Evans, of Chicago, who spoke from his extended experience in raising birds on his game farm; Dr. George W. Field, of Boston, who discussed the very highly successful experiments in the propagation of game conducted under his supervision in Massachusetts, and the writer, who spoke on the Federal and Audubon Bird Reservations. Hon. James A. Shinn, State Game Warden of Colorado, invited the members of the Association and also the American Fisheries Society, which met about the same time, to an elaborate banquet in the Albany Hotel.—T. G. P.

Enforcing the Aigrette Law

At the conclusion of the meeting of the National Association of Game Commissioners in Denver, Dr. T. S. Palmer, of Washington, the Vice-President of the National Association of Audubon Societies, visited a number of the large millinery stores of the city and called their attention to the provisions of the Audubon Law, enacted some time ago, to the effect that it was illegal to sell the feathers of Egrets. He gave the merchants until our o'clock in the afternoon to remove their stock from exhibition and sale. Judging from the accounts in the Denver papers, it is easy to see that there was great activity in the plumage trade that afternoon, as it was said that some of the milliners immediately sent word to their patrons that aigrette plumes could be had at a great reduction, if purchased before the fatal hour of four. A bargain counter rush resulted.

New Members

July 1, to September 1, 1912.

Life Member:

Miss Lillian M. Crabtree.

New Contributor:

Mr. C. R. Lanman.

Sustaining Members:

Appleton, Mr. Wm. T.
Bates, Miss Katherine L.
Birch, Mr. Hugh T.
Brooks, Mr. Allan C.
Cole, Mr. R. C.
Cook, Mr. Edward
Colton, Miss Caroline W.
Clark, Mr. George B.
Davidson, Mrs. F. S.
Gildersleeve, Mr. Ferdinand
Haywood, Mrs. George A.
Lay, Mr. Herbert
Lewis, Mr. Edwin J.
Means, Mr. Chas. J.
Oakley, Mr. Thorton
Oakley, Mrs. Thorton
Roberts, James O.
Shoemaker, Mrs. Edward
Spurlock, Mr. Frank
Van Wagenen, Mr. H. S.

The Egret Protection Fund

The responses which the friends of bird protection have been making to the appeal issued a few months ago by the Directors of this Association for funds with which to fight the traffic in aigrettes have been most pleasing and encouraging. Below we are glad to give public acknowledgment to those who have contributed since the last issue of Bird-Lore:

Amount previously reported....	\$4 022 54
Abbott, Mr. Holker.....	1 00
Adams, Mr. C. Q.....	2 00
Adams, Mr. William C....	1 00
Aldrich, Mr. Fred D.....	1 00
Allen, Mr. Charles A.....	5 00
Allison, Mrs. Mary D.....	1 00
Anderson, Mr. F. A.....	1 00
Anderson, Mr. George J....	5 00
Anonymous.....	70 75
Anthony, Mrs. S. Reed....	5 00
Applegate, Mr. E. M.....	2 00
Arrison, Mrs. J. M.....	2 00
Averill, Miss F. M.....	1 00
Babcock, Mr. Courtlandt..	1 00
Bacon, Miss M. P.....	1 00
Baker, Miss Charlotte S....	5 00
Baker, Mr. L. D., Jr.....	2 00
Baldwin, Mr. John D.....	2 00
Baldwin, Mr. William H....	1 00
Banks, Miss Martha Burr..	5 00
Bartol, Mrs. J. W.....	25 00
Battles, Mr. Frank.....	1 00
Baxter, Miss Elizabeth K...	1 00

Amount carried forward....\$4,164 29

Amount brought forward.....\$4,164 29

Beal, Mrs. James H.....	5 00
Beebe, Mr. C. K.....	1 00
Bemis, Miss Ida M.....	1 00
Berlin, Mrs. D. B.....	1 00
Biddle, Elizabeth, Caroline and Clement B.....	5 00
Birch, Mr. Hugh T.....	2 00
Bissell, Mrs. P. St. G.....	1 00
Blaney, Mr. J. J.....	1 00
Bliss, Miss Lucy B.....	10 00
Bowan, Mrs. Mary C.....	1 00
Bowdoin, Miss Edith G.....	10 00
Bowdoin, Mrs. Geo. S.....	5 00
Box 13, Jewett City, Conn.	1 00
Bradley, Miss L. N.....	10 00
Brazier, Mrs. J. H.....	1 00
Brewer, Miss Lucy S.....	10 00
Brewer, Mr. E. M.....	10 00
Brown, Mrs. F. F.....	2 00
Bridge, Mr. F. W.....	5 00
Bruen, Mr. Frank.....	1 00
Buck, Mr. Henry R.....	5 00
Bucklin, Miss Annie E.....	25
Bullard, Mrs. W. S.....	5 00
Burns, Mr. John, Jr.....	1 00
Burr, Mr. J. Tucker.....	5 00
Burroughs, Mr. George....	2 00
Burt, Miss Edith.....	2 00
Cady, Mr. Walter G.....	1 00
Carroll, Mr. Elbert M.....	10 00
Carson, Mr. H. A.....	1 00
Case, Mrs. James B.....	10 00
Case, Miss L. W.....	15 00
Chambers, Miss Katherine.	10 00
Chapman, Miss M.....	2 00
Chase, Mr. Percy.....	1 00
Chase, Mrs. Theo.....	5 00
Cheney, Col. Louis R.....	10 00
Chetwood, Mrs. G. J.....	1 00
Chubbuck, Mr. Isaac Y....	5 00
Clapp, Miss Marguerite S..	5 00
Clark, Miss Emily L.....	2 00
Clark, Miss Susan E.....	2 00
Clarke, Mrs. Charles D....	1 00
Clarke, Miss Lillian F.....	10 00
Clementson, Mrs. Sidney...	10 00
Cobb, Miss Annie W.....	1 00
Cole, Miss L. D.....	1 00
Cole, Mr. Wm. R., Jr.....	1 00
Colton, Miss Caroline West.	2 00
Conn. Fish & Game Ass'n..	10 00
Conner, Miss M. A.....	2 00
Coolidge, Mr. Philip T.....	2 00
Coolidge, Mr. J. Randolph.	10 00
Coney, Miss Kate E.....	1 00
Cope, Mrs. Francis R.....	2 00
Corning, Miss Mary I.....	25 00
Coursen, Mr. W. A.....	5 00
Craft, Miss Laura F.....	2 00
Crafts, Mr. John W.....	1 00
Crittendon, Miss Viola E....	1 00
Crocker, Mr. and Mrs.....	10 00

Amount carried forward.....\$4,444 54

Amount brought forward.....\$4,444 54

Cummings, Mrs. H. K.....	1 00
Curtis, Miss A.....	25 00
Custer, Miss Anna and Christophe, Mrs. L. C.....	10 00
Cutler, Mrs. Roland B.....	2 00
Cuyler, Miss Eleanor.....	5 00
Dabney, Mr. Herbert.....	5 00
Dace, Mrs. Annie L.....	1 00
Dame, Mr. Alfred M.....	1 00
Dame, Miss May.....	1 00
Dana, Mr. Charles E.....	5 00
Dana, Mrs. E. C.....	2 00
Davidson, Miss F. S.....	2 00
Davis, Mrs. W. W.....	1 00
Davis, Miss Susan L.....	3 00
Day, Miss Carrie E.....	2 00
Day, Mr. Stephen S.....	2 50
Dean, Mr. Charles A.....	25 00
Delano, Miss Julia.....	10 00
Delano, Mrs. H. L.....	1 00
Dennis, Miss M. H.....	2 00
Dexter, Mr. W. Endicott...	5 00
Dodd, Miss Jean M.....	2 00
Dodge, Mrs. Paul A.....	1 00
Dorman, Mrs. F. W.....	2 00
Dow, Miss Edna F.....	1 00
Draper, Mr. J. S.....	10 00
Dudley, Miss Sarah H.....	1 00
Dunham, Miss Mary.....	5 00
Dunn, Mrs. Houston.....	5 00
Durand, Mrs. Wallace.....	1 00
Duryee, Miss Anna B.....	2 00
Dyke, Mr. Arthur C.....	1 00
Early, Mr. Charles H.....	2 00
Eastman, Mrs. L. R., Jr....	1 00
Eddy, Miss B. M.....	2 00
Eddy, Miss Sarah J.....	10 00
Edwards, Miss L. M.....	2 00
Edwards, Miss Laura J....	2 00
Ellis, Mr. S. R. G.....	1 00
Ellsworth, Mrs. J. L.....	1 00
Emerson, D. R. & Co.....	5 00
Emery, Miss Georgia Hill..	25 00
Emmett, Miss Lydia E.....	5 00
Emmons, Miss Helen B....	10 00
Ensign, Mr. Charles S.....	1 00
Estabrook, Mr. Arthur F...	6 00
Evans, Mrs. R. D.....	50 00
Farnam, Mr. Henry W.....	10 00
Faulkner, Miss Fannie M.....	25 00
Fay, Mr. D. B.....	5 00
Fellows, Miss Mary E.....	1 00
Ferry, Mr. F. C.....	1 00
Ferry, Mr. H. C.....	1 00
Ferry, Miss Mary B.....	5 00
Fields, Mr. A.....	5 00
Field, Mr. E. B.....	3 00
Flagg, Dr. Elisha.....	5 00
Ford, Mr. Henry.....	50 00
Foster, Mrs. Cora D.....	1 00
Fowler, Mr. Rufus B.....	2 00

Amount carried forward.....\$4,824 04

Amount brought forward.....	\$4,824 04	Amount brought forward.....	\$5,045 54
Frazee, Mrs. W. Y.....	3 00	Hutchinson, Miss M.....	1 00
Freeman, Miss H. E.....	3 00	Hutchinson, Miss Marg.....	5 00
Freeman, Dr. Walter J.....	1 00	Ireland, Miss Catherine L.....	5 00
Frelinghuysen, Mr. F.....	2 00	Jackson, Miss Marian C.....	25 00
French, Miss C. A.....	5 00	Jarver, Miss Flora.....	5 00
Garst, Mr. Julius.....	2 00	Jenks, Miss Caroline E.....	3 00
Gedder, Miss Susan J.....	5 00	Johnson, Miss Mary.....	5 00
George, Mr. Edwin S.....	2 00	Jolliffe, Mrs. T. H.....	2 00
Gibson, Mr. John T.....	2 00	Jones, Mr. B. B.....	1 00
Gilbert, Mrs. Fred'k M.....	5 00	Jopson, Dr. & Mrs. J. H.....	1 00
Gillett, Miss Lucy D.....	5 00	Joslin, Miss Ada L.....	2 00
Gilman, Miss C. & Friends..	4 00	Keep, Mrs. Albert.....	1 00
Godefroy, Miss Roberte....	1 00	Kellogg, Mr. Frederick R....	5 00
Goodrich, Mr. C. C.....	5 00	Kempton, Miss May M.....	1 00
Goodwin, Rev. Geo. F.....	3 00	Kennedy, Mrs. Augusta M....	1 00
Goodwin, Mrs. Mary B.....	1 00	Kennedy, Mrs. John S.....	20 00
Goss, Mrs. A. V.....	1 00	Kettle, Mrs. L. N.....	100 00
Gould, Mr. B. C.....	1 00	Kimball, Miss Helen F.....	10 00
Graham, Mrs. Benj.....	1 00	King, Mr. Henry A.....	1 00
Grant, Mr. H. T.....	2 00	Kuhn, Mrs. Frederick.....	1 00
Graves, Mrs. Frances M.....	2 00	Kyle, Mr. William S.....	1 00
Gray, Miss Isa E.....	10 00	Lane, Mrs. Sarah D.....	10 00
Greer, Miss Jane N.....	10 00	Laughlin, Mrs. H. M.....	2 00
Grew, Mrs. E. W.....	1 00	Lawrence, Mr. Roswell B....	2 00
Grout, Mr. A. J.....	1 00	Leverett, Mr. George V.....	10 00
Guernsey, Dr. Jos. C.....	1 00	Lewis, Mrs. Herman E.....	5 00
Haeselen, Mrs. L. L.....	50	Lewis, Mr. J. B.....	1 00
Hallett, Mr. William R.....	5 00	Livingston, Miss Alida.....	10 00
Hallowell, Mrs. R. P.....	2 00	Long, Mr. F. W.....	3 00
Hallowell, Miss C.....	1 00	Loring, Mrs. C. G.....	3 00
Halsey, Mrs. Edmund D.....	2 00	Loring, Miss Susan M.....	5 00
Hamilton, Mrs. J. S.....	1 00	Loring, The Misses.....	22 00
Harkness, Mr. David W.....	1 00	Loring, Miss Helen.....	10 00
Harral, Mrs. E. W.....	5 00	Lowell, Miss Georgina.....	1 00
Hatch, Mr. L. N.....	1 00	Lowell, Mr. James A.....	5 00
Hathaway, Mr. Harry S.....	2 00	Lundy, Miss E. L.....	5 00
Hay, Mrs. John.....	10 00	Lunt, Miss Flora E.....	1 00
Hays, Miss Emily H.....	1 00	Lyman, Miss Emily R.....	1 00
Hazard, Mr. Roland Gibson	2 00	Lyman, Mr. Arthur T.....	10 00
Hedden, Mr. F. O.....	2 00	Mager, Mr. Gus.....	1 00
Hedden, Mrs. F. S.....	1 00	Mann, Miss J. A.....	1 00
Hemenway, Mr. Augustus..	25 00	Mann, Mr. J. R.....	1 00
Henderson, Mr. Alexander..	3 00	Manning, Mr. Leonard C....	3 00
Hendrick, Mr. J. H.....	1 00	Mansfield, Miss Helen.....	1 00
Herpers, Mr. Henry.....	10 00	Markoe, Mrs. John.....	10 00
Higbee, Mr. Harry G.....	1 00	Marsh, Mr. Spencer S.....	1 00
Hills, Mrs. James M.....	5 00	Marshall, Mrs. E. O.....	5 00
Hills, Mr. E. A.....	5 00	Mason, Miss E. F.....	5 00
Hittinger, Mr. Jacob.....	10 00	Massachusetts, S. P. C. A..	5 00
Holden, Mr. E. F.....	2 00	Maury, Mr. J. F.....	5 00
Hollenback, Miss Amelia B.	5 00	May, Miss Alice.....	1 00
Hooker, Miss Sarah H.....	2 00	May, Miss Adelina.....	2 00
Hooper, Miss Mary C.....	1 00	May, Miss E. C.....	2 00
Horton, Miss.....	2 00	Melbye, Mr. H. T.....	1 00
Horr, Mrs. E. E.....	1 00	Merrill, Miss Fanny E.....	20 00
Houghton, Mr. Clement S..	10 00	Merriman, Miss Helen.....	5 00
Howe, Mr. E. W.....	1 00	Merriman, Mrs. Daniel....	5 00
Hungerford, Mr. R. S.....	10 00	Merritt, Miss Edna.....	1 00
Hunter, Mrs. W. H.....	1 00	Metcalf, Mr. Williard.....	5 00
Hurd, Miss Elizabeth.....	3 00	Meyer, Miss Heloise.....	10 00
Hutchins, Mrs. Edward W..	3 00	Miles, Mrs. Henry A.....	1 00
Hutchinson, Mrs. Charles..	5 00	Milford, Mrs. V. S.....	5 00

Amount carried forward.....\$5,045 54

Amount carried forward.....\$5,443 54

Amount brought forward...	\$5.443	54
Miller, Mr. E. L.	2	00
Millett, Mrs. J. H.	1	00
Millns, Mr. J. T.	1	00
Minot, Mr. William	2	00
Mitchell, Mr. James T.	5	00
Montell, Mrs. & Mr. F. M.	2	00
Montgomery, Miss Mary A.	5	00
Moore, Mrs. E. C.	1	00
Morrill, Miss A. W.	3	00
Morris, Miss Anna	2	00
Morris, Mr. Robert O.	5	00
Morse, Mr. Frank E.	1	00
Mosely, Miss Ellen F.	25	00
Mundy, Mrs. Floyd W.	5	00
Munro, Miss Martha H.	1	00
McBurney, Mrs. C.	5	00
McCullough, Dr. P. B.	1	00
McCormick, Mrs. R. Hall	5	00
McKay, Rev. C. A.	1	00
MacGregor, Miss E. T.	1	00
Nesmith, Miss Mary	5	00
Nice, Mrs. L. B.	3	00
Nicholson, Mr. J. C.	1	00
Noyes, Mr. Raymond	2	00
Oliver, Dr. Henry K.	10	00
Olmsted, Mr. F. L., Jr.	1	00
O. F. S.	1	00
Osborne, Mr. Arthur A.	2	00
Paine, Mr. Nathaniel	1	00
Parsons, Mr. John E.	5	00
Peck, Dr. Elizabeth L.	1	00
Peckham, Mrs. W. H.	10	00
Pepper, Dr. William	5	00
Pepper, Mrs. William	5	00
Petty, Mr. E. R.	2	00
Philburt, Mr. F. H.	2	00
Phillips, Mr. John C.	25	00
Phillips, Mrs. Chas. E. H.	3	00
Pickman, Mrs. Dudley L.	25	00
Pierce, Mr. George Willis	5	00
Pilgrim, Mr. A. S.	1	50
Pilsbury, Mr. Frank O.	1	00
Porter, Miss Elizabeth B.	2	00
Porter, Miss Juliet	5	00
Post, Mr. William S.	2	00
Potts, Mrs. F. M.	2	00
Powell, Mrs. S. A.	5	00
Power, Mrs. W. H.	2	00
Powers, Mrs. Arthur G.	1	00
Pratt, Mr. George Dwight	1	00
Pratt, Mr. Joseph M.	3	00
Pratt, Dr. Frederick H.	2	00
"Primrose Hill"	1	00
Puffer, Mr. L. W.	1	00
Putnam, Mr. George E.	1	00
Putnam, Mrs. S. G.	1	00
Putnam, Dr. James J.	3	00
Randolph, Miss Fanny F.	7	00
Redfield, Miss Julia W.	1	00
Reed, Mrs. Wm. Howell	10	00
Rhoads, Mrs. S. N.	1	00
Richardson, Mr. H. H.	5	00

Amount carried forward... \$5.003 04

Amount brought forward.....	\$5.003	04
Richardson, Mr. John W.	1	00
Ricketson, Anna and Wilson	5	00
Robbins, Mr. Royal	10	00
Robbins, Mr. R. E.	10	00
Robbins, Mr. Samuel D.	1	00
Robbins, Miss N. P. H.	2	00
Robertson, Mr. J. A.	1	00
Robinson, Mr. William A.	1	00
Rogers, Miss Frances S.	5	00
Rogers, Mrs. J. F.	3	00
Rogers, Mr. W. S.	5	00
Roseley, Madam Alice	1	00
Ross, Dr. Lucretius H.	2	00
Rowley, Dr. Francis H.	2	50
Sabine, Dr. George K.	1	00
Sage, Mr. John H.	5	00
Sampson, Miss Lucy S.	1	00
Saunders, Mr. Charles O.	1	00
Saville, Mrs. A. H.	1	00
Sears, Mr. Horace S.	10	00
Sears, Mr. William R.	5	00
Sedgwick, Miss Mabel	2	00
Severance, Mrs. P. C.	1	00
Sewall, Mr. Jotham B.	5	00
Shaw, Mrs. Geo. R.	2	00
Shaw, Mr. Louis Agassiz	25	00
Shepard, Miss Emily B.	5	00
Shepard, Mrs. Emily E.	5	00
Sherman, Miss Althea R.	3	00
Sherman, Mr. John P. R.	25	00
Shoemaker, Dr. Harvey	1	00
Shove, Miss Ellen M.	5	00
Simmons, Miss Margarette B.	1	00
Simpkins, Mrs. M. W.	5	00
Sitgreaves, Miss M. J.	5	00
Slade, Miss Elizabeth A.	3	00
Small, Miss Cora	1	00
Smith, Dr. C. B.	1	00
Smith, Mrs. J. N.	5	00
Smith, Mrs. Mary P. W.	1	00
Snyder, Mr. Warren	2	00
Spachman, Miss Emily S.	1	00
Spaulding, Mr. Edward	1	00
Spong, Mrs. J. J. R.	10	00
Sprague, Mrs. Isaac	20	00
Sprague, Dr. Francis P.	15	00
Squires, Mrs. Grace B.	2	00
Stanley, Mrs. Mary A.	1	00
Stanton, Mrs.	1	00
Starr, Miss Florence	1	00
Steese, Mrs. Edward	2	00
Stevens, Mr. F. E.	1	00
Stevenson, Mrs. Robert H.	10	00
Stewart, Miss Kate C.	1	00
Stick, Mr. H. Louis	3	00
Stimson, Mr. William B.	1	00
Strond, Mr. H. M.	1	00
Swain, Mr. George F.	2	00
Swan, Mr. Charles W.	1	00
Swasey, Mr. E. R.	50	00
Swords, Mrs. Albert S.	1	00

Amount carried forward... \$5.004 54

Amount brought forward.....	\$5,994	54
Tapley, Miss Alice P.....	15	00
Tapley, Mrs. Amos P.....	15	00
Tapley, Mr. Henry F.....	3	00
Tenney, Mr. Albert B.....	1	00
Thomas, Mrs. Samuel H....	2	00
Thorndike, Mrs. Augustus..	2	00
Thwaites, Mrs. R. G.....	1	00
Topliff, Miss Anna E.....	1	00
Tower, Miss Ellen M.....	5	00
Tower, Mrs. Kate D.....	1	00
Towne, Miss Elizabeth (Ed.)	1	00
Townsend, Mr. W. S.....	1	00
Trier, Miss Minnie.....	1	00
Troup, Mr. Chas. A. S.....	1	00
Tucker, Mr. William F.....	2	00
Tuckerman, Mr. Frederick..	2	00
Tuffits, Miss Mary I.....	1	00
Tweedy, Mr. Edgar.....	5	00
Tyler, Mr. and Mrs. W. G..	2	00
Tyson, Dr. James.....	1	00
Underwood, Mrs. C. J.....	2	00
Van Arnin, Miss Albertina..	5	00
Van Bauk, Hon. H. Fe.....	2	00
Van Dyke, Mr. Tertius....	10	00
Van Huyck, Mr. J. M.....	2	00
Van Name, Mr. Willard G..	10	00
Van Vleck, Mr. M. D.....	5	00
Van Wagenen, Mr. and Mrs.		
H. W.....	10	00
Varick, Dr. and Mrs. W. R..	5	00
Varick, Miss Marguerite M.	1	00
Vickery, Mrs. A.....	2	00
Victor, Dr. and Mrs. E. W..	5	00
Wadsworth, Mr. Clarence S.	10	00
Walker, Miss Mary A.....	1	00
Ware, Mrs. Moses W.....	3	00
Warren, Mrs. S. D.....	5	00
Washburn, Miss Annie M...	1	00
Wayne, Mr. Frederick C....	1	00
Webster, Mr. F. G.....	5	00
Weeks, Mr. Andrew Carey..	5	00
Weeks, Mr. W. B. P.....	10	00
Welch, Mr. C. W.....	1	00
Weld, Rev. George F.....	3	00
Wentworth, Miss Ellen L...	2	00
Wetherill, Mr. W. H.....	1	00
Wheeler, Mr. Frank P.....	1	00
Wheeler, Mr. Wilfrid.....	1	00
Wheelright, Miss Mary C...	5	00
White, Miss Grace C.....	2	00
White, Miss K. H.....	1	00
Whitney, Miss Anne.....	10	00
Whitney, Miss Ellen F.....	1	00
Whitney, Mr. Milton B....	5	00
Wickham, Mr. D. O.....	5	00
Wier, Mrs. Frederic N.....	1	00
Wilbour, Miss Theodora...	100	00
Wilcox, Miss Effie M.....	2	00
Wilcox, Mrs. Wm. W.....	1	00
Wilkins, Miss Laura.....	1	00
Willard, Miss.....	5	00
Williams, Mr. Robert W....	1	00

Amount carried forward....\$6,306 54

Amount brought forward.....	\$6,306	54
Williams, Dr. Edward R....	2	00
Williams, Mrs. Francis H...	5	00
Williams, Mr. George F....	2	00
Williams, Mr. John D.....	10	00
Williams, Mrs. Sydney M...	1	00
Wilson, Miss Annie E.....	3	00
Winchester Rptg. Arms Co..	100	00
Winkley, Mr. Henry W....	1	00
Winslow, Miss Alice V....	1	00
Winsor, Miss Linda K.....	2	00
Witherbee, Miss E. W.....	1	00
The Woman's Study Club		
of Wimbledon, N. D....	3	00
Wood, Mrs. D. H.....	1	00
Worcester, Mr. Alfred....	5	00
Woodward, Dr. S. B.....	5	00
Wright, Mr. J. Arnold.....	1	00
Wright, Miss Mary A.....	1	00
Young, Mr. W. H.....	2	00

Total.....\$6,452 54

Alabama

An extensive scheme in conservation, including the establishment of game refuges and forest preserves of large areas, has been brought forward by Hon. John H. Wallace, Jr., State Game and Fish Commissioner. The Commissioner will ask the Legislature, at the coming session, to pass a bill declaring all lands owned by the state, whether held in fee or in trust, State game refuges and forest preserves, to be patrolled and protected against hunters or timber vandals.

Alabama holds in trust, swamp and overflowed lands, the sixteenth section school lands and tax redemption lands, the aggregate amounting to several hundred thousand acres.

Under Mr. Wallace's plan, these State forest preserves, if established as game refuges, would be patrolled by wardens who would see that the State's property was not vandalized, and that it was undisturbed from the onslaughts of the hunter.

The proposition has been submitted to Governor O'Neal, Superintendent of Education Willingham, State Land Agent Martin and Colonel Samuel Will John, of the Trustees of the Brice Insane Hospital, and has their most cordial endorsement.

It is to be earnestly hoped that this wise and far-sighted plan advanced by Mr. Wallace will be consummated.—T. G. P.



1. PINE GROSBK, Adult Male

2. PINE GROSBK, Female

3. PINE GROSBK, Immature Male
(One-half Natural Size)

Bird = Lore

A BI-MONTHLY MAGAZINE
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No. 6

The Magpies of Culebra Creek

By EDWARD R. WARREN

With photographs by the author



A SQUAWKER

I HAVE seen many Magpies during my more than thirty years residence in Colorado, but nowhere have I seen so many within a limited space as I saw this last summer (1912) along about three miles of Culebra Creek, near San Acacio, Costilla County, Colorado. There may have been as many above the portion I explored, and very likely were, as the conditions were equally favorable, but below, the trees were practically absent, and therefore the birds. The conditions which were so favorable to the abundance of these birds were plenty of willow and cottonwood trees for nesting-sites; while there was an entire absence of them on the surrounding country, a level prairie, part of the San Luis Valley. Another thing which I think may have contributed to this plenty is the fact that the region is an old Mexican grant, and the land has all been under private ownership, and not public land open

to settlement; hence there have been but few people about to molest the birds, and they have bred and multiplied in peace.

However that may be, they were there in hundreds, if not in thousands. As one walked among the trees, he could see the bulky nests on every hand, sometimes as many as five in a single tree. Of course, not all had been occupied this season, many were old and abandoned; but, if only a third had been in use, that means that many young were hatched; and there certainly were, for every little way a family would be seen near a nest. I happened to be there just when the youngsters were beginning to come out of the nests and climbing about in the home trees, hardly able to use their wings, and, if the Editor will

refrain from using his blue pencil on a bull, not very handy with their feet as yet, for they often found difficulty in getting foothold on the branches. This was the last week in June. According to observations I once had the opportunity of making, they come out at between three and four weeks of age. When about five weeks old the bird can fly a little, but is still very awkward in alighting and attaining a footing.

The families I saw varied in number from three to six, but Silloway has recorded thirteen eggs in a nest. When the young Magpies first appear to the outer world, their tails are very short, but grow rapidly, though they probably do not attain full length until early fall. The adult Magpie is a decidedly



YOUNG MAGPIE

cautious bird, not exactly shy, for he is pretty much in evidence wherever he lives, but has pronounced scruples against allowing human beings to approach too close, especially if they have guns, and is rather suspicious of a camera. Even the youngsters are very restless, and keep on the move among the branches when one is near, so that it is difficult to secure good pictures, even with a reflecting camera. The subject gets out of focus before one can operate the shutter, and the bird itself is difficult to focus on when in a hurry, the plain black-and-white coloration affording no sharp marks to use for focusing points.

The young keep up a continual squawking when about the trees; there is no other word for it, it is just plain

squawk. Whether they are talking with one another, or calling for food, I cannot say; but, as they are sociable birds and will really learn to talk a little, we will give them the benefit of the doubt, and say they are conversing. When a person is close, the noise is louder, and the parents often join in, but take good care to keep at a safe distance. It becomes decidedly tiresome at times.

The amount of fear shown varied, as usual in young birds, with their age; and the older ones could hardly be approached at all closely, but kept moving around restlessly in the trees, and even flying to others.

A Magpie's nest is an exceedingly noticeable structure, and there is no attempt at concealment about it, for one can hardly avoid seeing it, though occasionally one is found in a thickly branched willow which is difficult to see; but this is due rather to the accident of location than to any intent on



A MAGPIE NEST IN A COTTONWOOD, SHOWING SIDE ENTRANCE
Photographed by H. W. Nash, at Pueblo, Colorado, May 1, 1897

the part of the birds. The edifice begins with a foundation of twigs, in the upper part of which is a cavity from six to ten inches deep, with a mud base and outer wall, something like a Robin's nest, and usually lined with fine roots. Over this is a roof of twigs, with the entrance hole in one side just above the top of the cavity. This roof varies much in different nests; sometimes it is a good thick affair, and again it does not amount to much, almost wanting. As the same nest may be occupied for several successive years, it is possible the owners may add something to it annually. Often they are very bulky, four feet or more in height and three in diameter.

As for situation, Magpies will build in almost any sort of tree which is at hand; but the great majority of the nests I have seen were in cottonwoods



AN ADULT MAGPIE

or willows, and I do not think they care for evergreen trees, for in localities where such were at hand, along with the other sorts, they were seldom used. The height from the ground varies. The entrance to one nest which I photographed was not more than three feet above ground, but this was exceptional; usually they vary from ten to fifty feet above ground. As for the location in the tree, that is also variable. On Culebra Creek almost every conceivable variation was found, and I tried

for a series of pictures of the most characteristic, some of which show that the nest may be in the crotch where the trunk makes its first division, or out on a branch; often it is built at the side of the trunk, where a short bushy branch affords a foundation for starting the structure. In willows, which here are clumps of small stems growing closely together, and not trees with a single large trunk, the nests are placed among the thick branches, and while they sway in every breeze they will stand for years.

As might be expected from the size and manner of construction, Magpie

nests are often used by other birds. The following birds have been found using them for their own nests, but usually, if not always, nesting on the top, having either torn off the roof, or else it has been broken down by age or the weight of winter snows: Great Horned Owl, Long-eared Owl, Screech Owl, Sharp-shinned Hawk, Sparrow Hawk, Bronzed Grackle, Mourning Dove, English Sparrow, and I once found one which I thought had been used by a Red-tailed Hawk, but could not be sure, because the nest was not in use at the time I found it. There was circumstantial evidence that the nest had been used by either Hawks or Owls, and the Redtails were about. Rockwell says that Sparrow Hawks prefer a nest that is roofed over. The most peculiar "bird" I have heard of as occupying a Magpie's nest was mentioned to me by Mr. C. E. Aiken. He told me that a man hunting near Colorado Springs was passing an old nest, looked up and saw a pair of ears and a nose, shot at them, and out tumbled a Gray Fox!

Like all the Crow and Jay tribe, Magpies are omnivorous, and also more or less mischievous. They will rob other birds' nests of eggs and young, steal eggs from the poultry-yard, and are said to have a bad habit of picking at raw sores on horses and cattle, on the range or in a pasture. They feed on carrion when it is to be had, and thus do good as scavengers, and no doubt eat many harmful insects.

Our Winter Guests

By ELIZA F. MILLER, Bethel, Vermont

FOR several years it has been our habit to feed the winter birds, but until the winter of 1911-12 we have failed to attract others than Chickadees and White-breasted Nuthatches as regular boarders. We have a shelf arranged against the kitchen window that opens upon a covered piazza, so that it is always protected from storms, and here our birds feed without fear of us.

In 1906, we learned that Chickadees could be tamed to eat from our hands, and, every year since then, we have had from two to six or seven that would do this; and some of them easily learn little tricks that are amusing and show much intelligence. I once held a piece of butternut meat (their favorite food) in my teeth, and invited one to come. Chickadee saw and heard and came, but could see no place to stand. He went to the top of my head to consider, but could not think it out, and soon left. I held my finger horizontally before my mouth, and he came at once, alighted on it and took the nut from my teeth. After that, they learned to take food from my lips while hovering, or sometimes they grasped my chin with their scratchy little nails.

They believe in "suggestions," these birds. I have sometimes let down

the window at the top and held food in my hand above it, and they readily came and took it. They soon learned to flutter near the top of that window, and were usually promptly rewarded for their brightness. In the spring, when the migrants take our attention, the Chickadees plainly show a "me too" disposition. One day I was looking at a Junco, and one of the Chickadees, disliking to be ignored, flew across in front of me several times; but I was intent on the Junco, and took no notice. Then he hovered near me, and finally alighted on my arm. As that did no good, he fluttered close to my face, coaxing for nuts from my lips. I had not asked that trick of him for weeks, but he had not forgotten, and he meant to gain my attention if possible. He succeeded. These little fellows are so entertaining and full of friendly ways that we should find the winters lonesome without them.

Just once, during the severe winter of 1907-8, a tiny Red-breasted Nuthatch came to my hand. He was very hungry, and, when he found the abundance of suet-crumbs on the shelf, he took them away and hid them as fast as he could. He was perfectly fearless, and would keep on working when I was close to the shelf. After he had carried away all of the suet, I held out some in my hand, and he came, after fluttering like a moth before it, alighted on my hand and took the suet. He very evidently did not regard me as a personal friend, as do the Chickadees, but simply as an uncommon animal that had food for him.

Last winter we had bunches of millet stalks tied to trees and bushes near the house, hoping to attract Redpolls. In February, large flocks of Snow Buntings and Redpolls were at times in the lot next to ours, eating weed-seeds, and, on February 27, one Redpoll found our millet. Apparently he told his friends, as the number increased daily until forty was no unusual number. They easily learned to find millet seed that we scattered under various covered places, or upon the snow. They learned too easily, for they came to the Chickadees' window-shelf in a mob and forced our little friends away, squabbling shamefully among themselves over the suet, crumbs, and nuts. We were obliged repeatedly to drive them away, lest we lose our Chickadees. Fortunately they did not know how to eat sunflower seeds, or the Chickadees would have lost all of their food. When the ground was snow-covered, we had to keep plenty of millet seed out in the yard for them, or they would have monopolized the shelf. These Redpolls are beautiful little creatures, but they fully illustrate the "survival of the fittest" idea in their conduct. However, every time the hillsides became bare, they would be away for the most of the day, and that gave our little favorites a time of peace.

For several days, a male Purple Finch ate at the table with the Redpolls. One Red-breasted Nuthatch frequented our piazza many days in March, and two White-breasted Nuthatches were here daily after the middle of January. Three Downy Woodpeckers and a Brown Creeper were often in our trees

where we tied suet, and twice our sumac tree furnished lunch for the splendid Pine Grosbeaks. A dozen Chickadees were with us after the middle of January, and we never before had so many that were willing to come to our hands, and often just for friendship, when we held no food.

Our neighbors saw them do this, and even received the little fellows on their own hands, when calling upon us. The custom of keeping bird-tables has spread through the village, and several families have Chickadees that are friendly, besides the other birds that are glad of a sure supply of food. Redpolls follow the Chickadees to the new stations, and one mill-owner, after mixing various seeds for them, has decided that Hungarian millet pleases them most.

On March 12, as I stood on the piazza, a tiny Pine Siskin came to the step below, perfectly fearless, and unconscious of me, and stayed many minutes while I examined it, finding the olive-green on the long wing-feathers very pretty. Later, two more came, one having large, bright marks of clear sulphur on wings and tail. These three were very loving among themselves, and friendly with the Redpolls. All were fearless of us. The sulphur-trimmed bird stayed only one day, but one or both of the others were here nine days. They soon found the window-shelf, and, like all of the other birds, preferred butternuts above all else. They were very quiet, and were not afflicted with "nerves," as are the Redpolls.

One day I found that I could touch one of these Siskins, so I placed my fingers, holding a cracked nut, over the nut she was eating, and she very willingly ate from the one that I held. Another nut was in my other hand, and the Chickadees took turns in eating that, or clinging to my arm, while one ran across my shoulders, all being anxious for my attention because I was busy with a new pet.

The Siskin ate from my hand on the shelf several times that day, and the next day, seeing a Chickadee fly to my hand, she followed, and he hastily gave up his place to her. Twice she did that, and afterward did not hesitate to come alone. The other Siskin tamed as readily, so that by the third day we could at any time hold out both hands with nuts, and a Siskin would come to each hand, and remain to eat indefinitely. We much regret that we neglected to get photographs of these perfect sitters. They were much less active than Chickadees.

I wonder why it is that most birds, if fed, become irritable toward one another. These Siskins, though loving at first, fought fiercely later, and were so savage with Chickadees that they dared not come to our hands if the Siskins were near. They even drove off the White-breasted Nuthatches, so much larger than themselves. The Redpolls, too, seemed happy together before we fed them. Late in March, when Song Sparrows and Juncos came, they ate peacefully with the Redpolls, until one day we found that one Song Sparrow had "cornered" the millet, and had driven away all Redpolls, Juncos, and

Sparrows, and this he persistently did, though the Redpolls returned many times.

In the last weeks in March, the Redpolls sang a low, continuous warble, interspersed with a short note that at a distance sounded like "buzz," but when near it was a liquid rattle, shorter and less vigorous than the *whizz* of the Siskin.



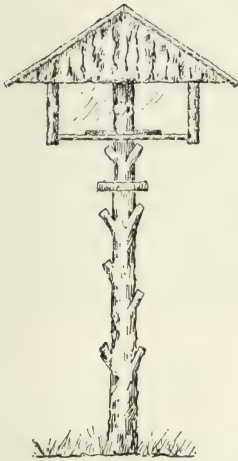
BODIES OF WILD DUCKS IN AN OIL LAKE

Near Tampico, Mexico, there are many huge oil wells throughout a big stretch of country. The uncontrolled portion of the oil is caught in big reservoirs. The oil is black and tar-like. Thousands of Wild Ducks land in the oil, thinking it water, and are soon reduced to a pitiful ball of asphalt. The bodies line the shores of every reservoir. This picture, taken in January, 1912, at Oil Wells, on the Panuco River, is an average example of this phenomenon.

—THOS. M. GALEY, 316 North Negley Avenue, Pittsburgh, Pa.

A Rustic Food-House

By FREDERIC H. KENNARD



IN BIRD-LORE for January-February, 1912, in an article entitled "My Experience with Von Berlepsch Nest Boxes," there were shown photographs, on pages 3 and 8, of an adaptation of the German food-houses, designed by Baron Von Berlepsch, that has proved successful on my place, and which was later adopted by Ernest Harold Baynes, and used very successfully by him and the Meriden Bird Club, in and about Meriden, New Hampshire. The many inquiries with regard to these food-houses that have been received from bird-loving friends lead me to infer that there may be some of the readers of BIRD-LORE who would like to build them, and for their benefit I submit the following description and sketch.

The food-houses should be set up in some suitable place, preferably in or near shrubbery, which, while offering protection to the birds, will not hinder close observation of their doings while they are visiting the food-trays.

The house should be supported, preferably by a fairly stout red cedar post, with the bark left on that part above the ground, and the branches cut about six inches long, so as to serve as perches for prospective visitors. The post should be $5\frac{1}{2}$ to 6 feet above the ground, and set at least 3 feet in the ground, and that portion below the surface should be stripped of bark, and given a thick coating of coal-tar for its proper preservation. If the house be in a position exposed to the winds, the post may be set in concrete.

The house itself consists of a square hip-roof, 2 feet 10 inches over all, and supporting beneath it four glazed sashes, 2 feet long by $10\frac{1}{2}$ inches high, and securely joined at the corners. It is attached to the supporting post by means of a wooden block 2 inches thick, fastened beneath the apex of the roof, with a hole in its center into which the top of the post is driven and nailed.

The roof should be made of three-fourths inch matched sheathing, preferably of cypress, running up and down, with battens over the four hips, the better to keep out the weather. The sashes may be made at home, though I have personally found it better to procure them from some near-by sash manufacturer.

There should be two food-trays fastened about the supporting post. The upper, 12 inches in diameter, should be on a level with the bottom of the

sash, easy of access to the hungry birds, and easy of observation to inquisitive humans; while the other, about 8 inches in diameter, should be about 8 or 10 inches lower, and useful as a preliminary lure to the shyer visitors.

On my own place, which has a great many evergreen trees, I have painted the roof and sash of the food-house a dark green, to match the green of the surrounding pines. Mr. Baynes has used other colors; but I doubt if it makes very much difference to the birds what the color is, provided it is inconspicuous. The question of color may be eliminated, and a very pleasing effect achieved, by making the food-house entirely rustic; shelter as well as post, covering the roof with bark, and making the battens and sashes of strips of white cedar or spruce with the bark on.

Gull Pensioners

By E. L. MOSELEY

With photographs by E. Niebergall

DURING March, 1912, several hundred Herring Gulls could be seen at one time resting upon the ice of Sandusky Bay. Some always remain in this vicinity through the winter. When the ice becomes thick enough for men to fish through it, the Gulls are given the small fish and the water-dogs (salamanders). Some of the fishermen bring back to the ice



HERRING GULLS ON THE BEACH AT SANDUSKY BAY, OHIO

with them the heads of fish they have dressed at home and other scraps for the Gulls. But the last week of February, this year, Mr. Louis Beverick, foreman of the Booth Fish Company, began thawing fish from their freezers and feeding them to the Gulls. The first day, only twenty or twenty-five birds came to the dock, but each day the number increased, so that by the



THE GATHERING OF THE GULLS



HURRYING TO THE FEAST

middle of March a thousand or more Gulls were being fed. The Post Fish Company and Lea Bros. also fed the Gulls.

Later, the Humane Society enlisted the sympathies of the children, and on March 29 baskets of food brought to the different school buildings were taken to the Gulls. However, they had been so well supplied with fish that they would not eat dry bread, as a hungry Gull will. After the bread on the



AT BREAKFAST TIME

ice became wet, they took it, but rejected corn, oats, and peanuts. About April 2 the ice broke up.

It was commonly believed that the severe winter prevented the birds from finding open water, and that they would have starved if food had not been given them. Perhaps the number of Gulls on Lake Erie was increased by the closing of lakes farther north. The western portion of Lake Erie was frozen, so that teams and automobiles crossed from Canada to Ohio, something which is possible only in unusually severe winters. The first half of the winter there was open water much of the time within a few miles of Sandusky, but by March 12 the various weather-bureau stations reported that ice covered the lake beyond the range of vision, and the Gulls were there deprived of this usual source of food.

When Mr. Beverick began feeding the Gulls, they were shy, but in time became so tame as to take fish from the basket he held in his hand. The flapping of hundreds of white wings was a pretty sight, and many people were attracted to the docks. One photographer, Mr. Niebergall, took one hundred and twenty five different views of the birds.

Mr. Beverick saw a Gull swallow three herrings, which together probably weighed about two and one-half pounds. It tried unsuccessfully to swallow a

fourth one. After becoming so gorged, it was unable to fly far. Its weight was perhaps doubled by the meal.

From one fish-house some salted fish were thrown out, but were not relished by the Gulls that took them. They did not swallow them until they were approached by other Gulls. Fresh fish, however, were devoured even more greedily than those which had been frozen and thawed. After swallowing a frozen fish weighing about a pound, a Gull would remain in a humped position until the fish was thawed enough so it could be bent.

About March 20, a white Gull much larger than the others, probably the Burgomaster, remained with the Herring Gulls about three days, taking more than its share of the fish.



A STUDY IN BIRD FLIGHT
Copyright by E. Niebergall

Tame Wild Turkeys

By WILLIAM T. DAVIS

With photographs by the author

DOWN on the Florida coast, among the Ten Thousand Islands, in the Gulf of Mexico, there is a small hamlet known as Everglade. A narrow river ebbs and flows with the tide before the few houses on its banks, and the place has the appearance of being on the mainland. As a matter of fact, however, it is on an island; for the "river" has a back entrance, so to speak, and there is another lead out to the Gulf. Our mission to Everglade, in April, 1912, was the collecting of insects, and so daily we rambled about the garden or in the near-by salt meadows.

Also, strolling about this open area and among the orange trees were three tame Wild Turkeys—two gobblers and a hen. They, too, were entomologists, and interested in grasshoppers. With the hen we had little to do, for she



WILD TURKEY IN AN ORANGE GROVE

generally kept at a respectable distance; but the young gobblers had no thought of running away, and all that was necessary was to wave the insect net at them, or make some demonstration by way of a challenge, when with a few short *chucks* the Turkeys closed in, and the net handle was then useful as a weapon of defence. It was one of our amusements to get the Turkeys much excited, and then run along a path at top speed, with the long-legged gobblers very mad and in hot pursuit. Then we would pop into one of the out-build-

ings, slam the door, and listen to the comments of the ireful Turkeys outside. After a while they would depart, or we would come out and charge them with the insect net. They, however, would go only just far enough away to be safe.

It gave us a new conception of the usually timid Wild Turkeys, to see them thus about the place, and more than tame. It was Turkey Gobblers, and not "gobble-uns," that would catch us if we didn't watch out.



DEFIANT GOBBLERS

Mr. George W. Storter had had the birds some time upon our arrival, and he considered that the reason the Turkeys were content to stay about his place was that the most suitable ground for them was near the house, the mangrove swamps not containing the grasshoppers, etc., of which they were in quest. At night they would roost on the roof of some of the buildings, often on the shingled top of one of the cement cisterns, where they were not welcome, and it was one of the duties of Kirby Storter to dislodge them and make them roost elsewhere. The first illustration shows Kirby gibling the Turkeys, and about to run away with the gobblers in pursuit.

Mr. Storter suggested to us that we visit an inland orange grove situated on a hummock lying on the border of the Big Cypress Swamp. So, one day, we went in a power-boat, two miles up Allen's River, and then walked ten or twelve miles, first through salt meadow and then across most beautiful prairie country, where there were a multitude of flowers and many insects. Our chief regret was that we could not linger long by the way. In due time we reached the grove, and were surprised to learn that the Wild Turkeys were protected

there, and that we might expect to meet with them in our walks afield. We had not long to wait, for the very next day we saw several Turkeys walking in the grove, and they were in no particular hurry to get out of our way. They would run, it is true, upon our approach, and were not more than tame, as were the Turkeys at Everglade; but, nevertheless, through the wise policy of the managers of the grove, they were not very much afraid of man.

Our food was cooked on an open log fire under a shed, and we dined in a little building near the cook-house. One morning, one of the tamest of the gobblers came near this house to get the crumbs that had been thrown out, and I was able to get two snapshots with the camera from the open door.

One hears a great deal, and it is true, about bird life having a hard time of it in the South, where almost everything is shot at, often for the mere sport of shooting a living thing. It is encouraging, therefore, to find a place where the Florida Turkeys are protected, and where these ornamental birds add so much to the interest and beauty of an orange grove.

Bird-Lore's Thirteenth Christmas Bird Census

BIRD-LORE'S annual bird census will be taken as usual on Christmas Day, or as near that date as circumstances will permit. Without wishing to appear ungrateful to those contributors who have assisted in making the census so remarkably successful, lack of space compels us to ask each census-taker to send only *one* census. Much as we should like to print all the records sent, we find it impossible to use two from the same person.

Reference to the February, 1901-1912 numbers of BIRD-LORE will acquaint one with the nature of the report of the day's hunt which we desire; but to those to whom none of these issues is available, we may explain that such reports should be headed by a brief statement of the character of the weather, whether clear, cloudy, rainy, etc.; whether the ground is bare or snow-covered, the direction and force of the wind, the temperature at the time of starting, the hour of starting and of returning. Then should be given, in the order of the A. O. U. 'Check-List' a list of the species seen, with exactly, or approximately, the number of *individuals* of each species recorded. A record should read, therefore, somewhat as follows:

Yonkers, N. Y. 8 A.M. to 12 M. Clear, ground bare; wind west, light; temp., 38°. Herring Gull, 75. Total, — species, — individuals.—JAMES GATES.

These records will be published in the February issue of BIRD-LORE, and it is particularly requested that they be sent the editor (at the American Museum of Natural History, New York City) not later than December 28. *It will save the editor much clerical labor if the model here given and the order of the A. O. U. 'Check-List' be closely followed.*

The Migration of North American Sparrows

NINETEENTH PAPER

Compiled by Professor W. W. Cooke, Chiefly from Data in the Biological Survey

With drawings by LOUIS AGASSIZ FUERTES

(See Frontispiece)

PINE GROSBEAK

The northern parts of both hemispheres are inhabited by the Pine Grosbeak. The American birds have been subdivided into five forms, four of which inhabit respectively the Rocky Mountains, the California Mountains, the mountains from Alaska to Washington, and the coast district of Alaska. The other form nests locally in much of Canada east of the Rocky Mountains, south to Maine and the higher mountains of New Hampshire. This form, *Pinicola enucleator leucura*, is the only one that performs long migrations, and the data in the following tables refer exclusively to individuals of this sub-species. During the winter season the Pine Grosbeak irregularly invades the northern United States, and has been recorded as far south as Iowa, Kentucky, and the District of Columbia.

FALL MIGRATION

PLACE	Number of years' record	Average date of fall arrival	Earliest date of fall arrival
Flagstaff, Alberta.....	3	November 6	October 26, 1908
Aweme, Manitoba.....	13	October 28	October 12, 1902
Lincoln, Neb.....			November 7, 1910
Lanesboro, Minn.....			November 12, 1906
North Freedom, Wis.....	2	November 7	November 5, 1904
Iowa.....	3	December 3	December 1, 1903
Lake Forest, Ill.....			November 17, 1906
Southern Michigan.....	4	November 11	November 4, 1906
Ottawa, Ontario.....			November 1, 1883
Montreal, Canada.....	4	November 11	October 31,
Southern Maine.....	9	November 4	October 26, 1895
Monadnock, N. H.....			October 9, 1901
Vermont.....	4	November 18	November 6, 1905
Massachusetts.....	5	November 21	October 22, 1910
New Haven, Conn.....			October 30, 1903
Northern New York.....	4	December 2	November 28, 1980
Englewood, N. J.....			October 25, 1903
Warren, Pa.....			November 29, 1906

SPRING MIGRATION

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Washington, D. C.....	3	January 20	January 23, 1888
Philadelphia, Pa. (near).....			January 28, 1884
Wyoming County, Pa.....			April 8, 1896

SPRING MIGRATION, continued

PLACE	Number of years' record	Average date of the last one seen	Latest date of the last one seen
Northern New Jersey.....	4	March 14	April 21, 1905
Northern New York.....	6	March 13	May 5, 1904
Connecticut.....	5	March 28	April 7, 1907
Providence, R. I.....			April 3, 1897
Massachusetts.....	10	March 21	April 25, 1903
Vermont.....	4	March 31	April 18, 1888
Durham, N. H.....			April 22, 1900
Southern Maine.....	4	April 11	May 12, 1909
Hickman, Ky.....			March 19, 1888
Lake Forest, Ill.....			March 14, 1896
Southern Michigan.....	4	March 29	April 4, 1883
Ottawa, Ontario.....	5	March 23	April 21, 1883
Southern Ontario.....	4	March 18	April 23, 1911
Madison, Wis.....			April 19, 1907
Southern Manitoba.....	4	March 30	April 10, 1884

Notes on the Plumage of North American Sparrows

SEVENTEENTH PAPER

By FRANK M. CHAPMAN

(See Frontispiece)

Pine Grosbeak (*Pinicola enucleator*). In nestling plumage the Pine Grosbeak, of both sexes, resembles the adult female, but is less strongly tinged with yellowish. At the postjuvénal molt, the wing-coverts and feathers of the body are shed, only the wing and tail-feathers being retained, and the bird passes into first winter plumage. The female is now indistinguishable from adults of the same sex, but the young male assumes a distinctive dress, well shown by figure 3 of the frontispiece. This, it will be observed, resembles that of the female, but the head and rump have a reddish tone, suggesting an approach to the plumage of the adult male.

There appears to be no spring molt, and the nuptial, or breeding, plumage is acquired by wear which, as Dwight has shown, has the effect of brightening the general color of feathers through the loss of the barbules on the terminal barbs.

At the postnuptial molt, the young male acquires the reddish or pink plumage of the adult; but the presence of an occasional yellowish feather among the upper tail-coverts gives evidence of comparative youth, and it is probable that very highly colored males are at least several years old.

The western races of this bird are the Rocky Mountain Pine Grosbeak (*Pinicola enucleator montana*), the California Pine Grosbeak (*P. e. californica*), the Alaska Pine Grosbeak (*P. e. alascensis*), and the Kadiak Pine Grosbeak (*P. e. flammula*).

Notes from Field and Study

Relative Number of Birds in 1912

When the birds return in the spring after an exceptionally cold winter, such as the last one, our first concern is to see if their numbers have been greatly decimated by the severity of the winter. No attempt will be made here to consider others than the thirty-seven species that nest within sight and sound of my doorstep, and to a study of whose home life the summer months are devoted.

The species that returned with full ranks, as nearly as could be estimated, were the Killdeer, Mourning Dove, Screech Owl, Red-headed Woodpecker, Northern Flicker, Chimney Swift, Kingbird, Phoebe, Cowbird, Red-winged Blackbird, Meadowlark, Western Meadowlark, Baltimore Oriole, Vesper, Song, and Chipping Sparrows, Warbling Vireo, White-rumped Shrike, Maryland Yellowthroat and Catbird. The Ruby-throated Hummingbirds, which are summer boarders, but not breeders in the door-yard, were as numerous as usual. The Chimney Swifts, without being more plentiful than in the previous spring, have more than held their own of late years, due evidently to the absence in nesting-time for three seasons of those heavy, beating rains that dislodge the nests.

Sparrow Hawks for the first time nested on our place, and the species is now increased by four young ones, at the cost of the lives of numberless small birds. Bronzed Grackles, the Ishmaelites among birds, have increased alarmingly of late. Not a nest of theirs was to be found in the neighborhood ten years ago, whereas this year every evergreen tree seemed to harbor a pair of them. Brown Thrashers have appeared more numerous than usual. From two nests on this place four and five young ones respectively went forth in June; and the second nests of these pairs now (July 12) hold three eggs each. House Wrens have gained in

numbers in recent years, until they suggest the possibility of too many of them soon. Beyond doubt, they often are villainous little rascals in their relations with other birds. A pair of Chickadees that fed here all winter seemed anxious to nest here. Two more boxes were added to the six already in place, but the Chickadees were not able to find lodgment in any of them. Four singing Wrens at present monopolize the nesting-places. The nests now in progress, taken with two others in the nearest yards, bid fair to maintain the supply of House Wrens.

Apparently two-thirds of our bird species are as plentiful as usual, or are increasing in numbers. Of the others, the dryness of the sloughs this year excludes the Sora and the Short-billed Marsh Wren. The Bob-whites, nearly exterminated by the drifting snowstorms of two and three years ago, are on the increase once more, and in two or three places near-by the cheerful whistle of the cocks may be heard. The numbers of the Prairie Horned Larks have steadily decreased in recent years; no cause can be assigned for this loss except the usual accidents to which the species is subject. Quite otherwise seems to be the case of the Blue Jay, which has decreased so greatly that its scarcity at present has been remarked by people but slightly interested in birds. From circumstances known to me, I venture the opinion that some contagious disease carried them off. The only pair nesting in this neighborhood this year did not winter here. That the Bobolinks are no more than one-fourth so numerous as they were last year is the estimate. The absence of their voices from the bird chorus is a distinctly appreciable and grievous loss. Almost equally great has been the difference in the numbers of the Dickcissels last year and this. Although not a very common species in most years, their abundance in 1911 may be judged by the fact that after they

were located for nesting the singing of seven males could be heard from our dooryard. This year Dickcissels can be rated no more than tolerably common. Their spring arrival is later than that of any other of our breeding birds, and their nesting is no more than well begun when the work of destructive mowers is commenced in their haunts. The number of nests destroyed last year was large. The Grasshopper Sparrow, usually found in small numbers every summer, has not been observed this year, excepting one individual in migration time. The Goldfinch, a common bird usually, is scarce this year; so, too, are the Cliff and the Barn Swallow.

That the extreme cold of the past winter had some share in the reduction of some of the species is but a natural conclusion. The Goldfinch and the Robin both wintered in unprecedented numbers far north of their usual winter range in this region, which lies in the northward extension of the Austral Zone on both sides of the Mississippi River, as marked on the map prepared by the Biological Survey. Here, within the first six weeks of the year, there were twenty-six mornings of zero weather, or from zero to 30 and 36 degrees below that mark; yet, despite this cold, Robins survived, a flock of about thirty being seen in the latter days of February. The Robins as summer residents are not so numerous as usual, although the decrease in the numbers is not so noticeable as it is in other species. The Bluebird seems to have fared worse. In answer to investigations made in March, Mr. Merton Fox, who for eight years has been mail-carrier on Route No. 2 out of McGregor, Iowa, gave as his opinion that he was seeing more Bluebirds than usual. My observations have been of but four individuals; two were migrants, and two were summer residents several miles apart.—ALTHEA R. SHERMAN, *National, Iowa*.

Value of Winter Birds

Although I have been interested in birds for some time, I never fed them before

last winter, as our house is quite near the business section of the town, and I did not think that many birds would come to feed. Last winter, however, I put out sunflower seeds and suet, and one pair each of Carolina Chickadees, Tufted Titmice, Cardinals, and Downy Woodpeckers came daily. Another pair of Chickadees and a Carolina Wren also paid me an occasional visit.

I considered myself well repaid for my trouble by the excellent opportunities given for study and observation at close range, but I soon found that I was also to receive other compensation.

A plum and an apple tree stood close to where I had placed my counter, and I frequently saw the birds in these, apparently searching for food. The Downy Woodpecker was especially active, and was seen repeatedly climbing up and down the plum tree. We have usually had fair crops from the apple, but there have not been many plums for several years. I wondered at the time what effect the birds would have on the fruit.

The trees blossomed about the same as usual, but we soon noticed that the fruit did not fall so much as in former years. During spring and summer other birds came to feed in the trees, particularly the Yellow Warbler.

As a result of the good work of the birds, we had better crops on both trees than we have had for several years, even better than last year when the trees were sprayed.

This incident has convinced me that the winter-feeding of birds is worth while, even when viewed merely from the economic standpoint, without any consideration of the pleasure derived from watching the birds, or of the fact that this feeding is frequently the only thing that saves many birds from starvation during winter.—GEORGE W. TAVENNER, JR., *Parkersburg, W. Va.*

A Field Mark for the Least Sandpiper

Mr. John T. Nichols' remarks in the July-August number of BIRD-LORE on

the difficulty of distinguishing the Least and the Semipalmated Sandpipers in the field remind me that I have long since been intending to publish a note on this subject. To me the bills furnish the easiest method of distinguishing these two species in the field, for that of the Least Sandpiper is slightly decurved, while that of the Semipalmated is straight. I have never seen this distinction mentioned in the books, and it seems to have escaped the attention of some excellent observers—as of the artist who drew these two birds for a recent leaflet of the National Association of Audubon Societies; but it held true in a considerable series of specimens of the two species which I examined some time ago, and I have found it very useful in the field. Sometimes a single abnormal bird may puzzle one; but, if a number are together, the characteristic shape of the bill is sure to be very evident. It shows clearly in the photograph of the Least Sandpiper published with Mr. Nichols' note, especially in the image of the bird reflected in the water.—FRANCIS H. ALLEN, *West Roxbury, Mass.*

Notes on the Bald Eagle, Starling, and Song Sparrow, at Bernardsville, N. J.

Bald Eagle.—On June 23, 1912, while traveling in a motor on a wooded road near here, I came upon a flock of Crows. I stopped, as the Crows were cawing and flying about very excitedly. Upon looking more closely, I saw on the top of a dead tree, about twenty yards from me, a beautiful specimen of an adult Bald Eagle. I could then easily account for the excited actions of the Crows. This is the closest that I have ever approached a Bald Eagle.

The following is the number of times I have seen Bald Eagles at Bernardsville in the last few years: 1908, once; 1909, three times; 1910, none personally, once reported; 1911, none; 1912, twice personally, once reported.

On August 26, a friend of mine, Miss Marie Louise Blair, saw a Bald Eagle.

This makes the second summer record of which I know, all the others having been seen in the spring or fall. My other record for this season was on May 31.

Starling.—The first time that I remember seeing the Starling in Bernardsville was in 1909, in which year, as in the three following, a pair nested on the roof of our house.

They are now common in this locality. Lately I have seen flocks of about 500. This spring I saw twelve to fifteen walking and flying around a herd of cows, after the manner of Cowbirds. I am interested to know whether anybody has observed this before, or whether it is a newly acquired habit of this bird.

Following are the data which I gathered from observations made at the nest of a Starling. The nest was situated in a hole in a dead chestnut tree. The hole, which was near the top of a forty-foot tree, was about six inches deep.

May 20.

- 2.47 P.M., one old bird fed young.
- 2.55, one old bird fed young.
- 2.56, both old birds fed young.
- 3.01, one old bird fed young.
- 3.03, one old bird fed young.
- 3.08, one old bird fed young.
- 3.12, one old bird fed young.
- 3.15, one old bird fed young three insects, probably a worm, a beetle, and a locust, and then cleaned the nest.

May 23.

- 2.41 P.M., one bird fed young.
- 2.42, one bird fed young.
- 2.48, both birds fed young; one had worm cut in three parts.
- 2.58, one bird fed young with insect, probably a locust.

May 19.

- 2.37 P.M., one bird fed young.
- 2.39, one bird fed young.
- 2.42, both birds came; one had a worm, the other an insect, probably a Grasshopper; however, they both flew away again, but at
- 2.44 the one with the worm returned. It stayed in the hole ten seconds.
- 2.47, one bird came with a worm two inches long, but would not enter the hole, probably because of my presence.

There were two calls given by the old birds; one a low, nasal, complaining note,

the other was a grating click. The call of the young was a teasing note, uttered whenever the old birds came near the hole.

Once I waited five minutes, but the bird refused to enter the hole; however, when I concealed myself behind a rock, it did so immediately.

When flying low, the birds came straight to the nest; but when flying high, they circled a few times before alighting.

Every time the food was identified (and this was probably three-fourths of the time) it consisted of insects. After alighting on the tree the bird would hop two or three inches at a time, sometimes fly a foot or two, until it reached a distance of two feet from the nest; whereupon, it flew straight into the hole. When making exit, it flew straight away from the hole.

Song Sparrow.—A Song Sparrow's nest, of which I made a study, was situated about twenty feet from a house, in a four-foot *Retinispora squarrosa*. The nest was composed of coarse grass, lined extensively with horsehair. The dates of hatching and leaving nest were: May 18, 4 eggs; May 23, 3 eggs, 1 young; May 24, 2 eggs, 2 young; June 2, 2 eggs, 2 young; June 3, 2 eggs, 2 young out of nest.

The young, soon after hatching, have a rufous-brown skin sparsely covered by thin gray down. When one day old, the skin becomes lighter than when hatched;

and on auriculars and around eyes, is slate. The body is more thickly covered with down than when hatched. The bill is creamy buff, and the inside of the mouth ochraceous-buff.

During the time of incubation, and the period when the young were in the nest, only one adult was seen; but after the young left the nest both birds were seen near. The call notes of the adults, when I approached the young, were a low click, like the Chipping Sparrow's and also the Song Sparrow's usual call-note.

For two weeks after leaving the nest, the young could be found in a clump of bushes, not twenty feet away. On the day of departure from the nest, I found the young in the nesting tree. As I approached, one fluttered to the ground.

Though the adults became excited when I got too near the young, yet, when I retreated about twenty feet, they would fly up to the top of a tree and sing.—JOHN DRYDEN KUSER, *Bernardsville, N. J.*

An Unusual Nest-Site

On June 15, 1912, some small boys reported that they had found the nest of a strange bird along the tracks of the Chicago and Alton Railroad, south of the village, and guided me to the place. I found it to be the nest of a Killdeer, and



A KILLDEER'S NEST BETWEEN RAILROAD TRACKS

the male and female circled about uttering their usual notes of alarm. The nest had been found by a boy who had stooped to pick up a stone for his sling-shot, and at that time it contained three eggs, one of which he broke while handling it. The nest was one-fourth mile south of McLean, and on the rock ballast of the right of way of the railroad, and between the double tracks. It was three and one-half feet from the inner rail of the south-bound track. The nest seemed to be slightly hollowed out, and looked as if small flat splinters of stones had been placed in position by the bird building it. There were no protecting weeds or grass, and it was completely exposed.

To find out if the bird would stay on the nest while the trains passed, I observed the nest for several days. Before incubation began, the birds would stay near the nest; and, after incubation began, the bird on the nest would remain there until an approaching train was about ten feet distant, and would then rise, and often had hard work to fly out of the draft of wind created by the train. I did not see it stay on the nest while a train passed, and I doubt if it did at night, as the suction from the swiftly moving train must have been too strong, and trains often passed at the rate of fifty miles an hour. The bird would return to the nest as soon as the train had passed. A day or two before my last observations, I saw only one bird, and fear that the other had been killed by the train. On about the day when I expected the eggs to hatch I found no eggs or signs of them, and no young or old bird. What became of them I do not know.

The location for the nest was probably chosen on account of the rocks used by the railroad for ballast. These were mostly smooth limestone rocks, mixed



A KILLDEER'S NEST BETWEEN RAILROAD TRACKS

The eggs were laid to the right of the hat. See accompanying picture

with some cinders and pieces of coal. There was a pond a quarter of a mile away, where the birds were often found. The pictures were taken soon after the nest was discovered.—F. W. ALDRICH, *McLean, Ill.*

The Shrike in Action

Mr. Berners B. Kelly, in a paper of exceptional interest, published in the November-December, 1911, issue of *BIRD-LORE*, describes the Northern Shrike's method of dealing instantaneous death to the House Sparrow.

In the author's extensive experience, the Shrike has invariably attacked a House Sparrow, and in every case, once the Shrike has struck his blow, death has been instantaneous.

As the following notes, taken from my journal, describe apparently unusual occurrences, I submit them as a supplement to Mr. Kelly's observations:

"Jan. 27, 1910. This afternoon (2 P.M.) I watched for five or ten minutes a Shrike attempting to capture a Chickadee. My attention was attracted by the Chickadee's notes, *si-si-si-si, dee, dee, dee*, and I found the bird hiding in an isolated red cedar tree, while the Shrike was doing his best to find him. The Chickadee made no attempt to leave the tree, but kept moving about, chiefly among the inner branches. The Shrike followed his prey as best he could through the network of fine twigs, but often lost sight of it, evidently, and, coming to an outside branch, sat quiet, listening.

"When hard pressed, the Chickadee flew out and circled about the tree before diving in among the branches again. After these flights, sometimes he entered the tree low down, and then mounted to the very top by a series of short, rapid hops; sometimes, after flying to the apex of the tree, he passed downward to the lowest branches before flying again. Several times the Shrike hovered in the air, and holding his body motionless and upright, peered into the tree. Finally, although not frightened away, the Shrike gave up the chase."

"Jan. 13, 1910. About noon today, I came upon a Shrike in the act of killing a House Sparrow. I was not near enough to see clearly the details of the struggle, but I made out with certainty that the Shrike used his claws to hold the Sparrow down on the snow, while with his beak he struck or bit his prey on the head, and, that when he flew, he carried the Sparrow, still alive and shrieking, gripped in his claws. As the two birds floundered on the snow, the Shrike several times drew his head upward and backward before bringing it down on the Sparrow. This

was perhaps to gain force, perhaps to look about for danger. Although the Sparrow was still alive, the Shrike carried him easily to the branch of a tree. The struggle was described to me as continued on the ground until the Shrike was attacked by two cats, when he flew off, carrying the Sparrow with him."

The cedar tree in which the Chickadee eluded the Shrike's attack was not far from the town center of Lexington, Mass., the winter headquarters of the Sparrow. My note, therefore, indicates that the Shrike does not confine himself to the extermination of the Sparrow pest even in winter, when mice are not available, and even where the Sparrow is the commonest bird. The struggle in the snow instances a case in which the Shrike did not have the usual easy mastery over the Sparrow. Perhaps the blow, which Mr. Kelly well terms a "buff," was not delivered; if it was delivered, it was not a fatal one. In either case, the Shrike was able to fight at close quarters, and this is a method to which evidently he seldom has to resort.—WINSOR M. TYLER, *Lexington, Mass.*

The Northern Shrike

On a cold, cloudy morning in February, 1907, while a flock of small birds, mostly Juncos and Tree Sparrows, were breakfasting on the feeding-ground near the living-room window, a black-and-white bird lit on the garden fence, about a hundred yards away, and paused, waving his tail in the manner peculiar to the Shrike; then, swift as an arrow, he darted into the midst of the small birds, seized a Tree Sparrow and flew to the post of an arbor, quite close to the window. He carried the little bird in his beak by the neck, its head dangling loose as though its neck were dislocated; it was quite dead. Then he flew to the flat top of a gate-post, a little way off, and devoured it, apparently feathers and all, as we could find only a few wing- and tail-feathers on the snow after he was gone. How he held it we could not see, as some twigs intervened. Twice I have found his butcher shop in

out-of-the-way fence-rows. Once, impaled on the thorns of a blackthorn, I found a Junco and a Tree Sparrow. Both birds' necks were dislocated. I returned there three successive days hoping to see the Shrike, but was unsuccessful. Again, in April, I came upon a shrew and a large beetle impaled on the barbs of a wire fence. I lingered near for a long time, but the Shrike did not appear. Whether he saw me and would not come near, or had passed on in his migration, I do not know.—ELIZABETH C. COX, *Buckingham, Pa.*

A Robin Winter Colony

The winter of 1904-05 was delightfully open. There was a long, mild fall. The hills were clad with autumn tints almost the winter through. Twenty miles south of Saint Louis, in Jefferson County, Missouri, are still some hills clothed with the forests that were there when De Soto made his first voyage of discovery down the Father of Waters. These are the usual native trees, oak, elm, ash, hickory—a half dozen varieties,—and fringes of cedars. There is here an all-the-year-round resort locally famous as 'The Cedars,' named from its environing trees. This is some three miles back from the river, and near a stream called Glaize Creek. Along Glaize Creek are broad bottoms, with broken hills for border. Farther south the hills rise to a very considerable height. One of the large farms here, with both the bottoms and the upland, is that which has been owned for many years by Joseph G. Marriott. East from the farmhouse there was a mile of cedar-covered hill, and it was there that a pretty sight took place that lasted for months, and interested 'The Cedars' resorters as well as local people.

As usual, the birds gathered that fall for their long flight south. Day after day the great flights went overhead, until it grew late. One day we noticed many Robins about. They were fine, big, fat, saucy fellows, and, in place of passing on, they seemed to increase in numbers from week to week till there were thousands.

We began to wonder when they would move on, as the other birds, but they did not go. Gradually their daily routine took on a certain regularity which admitted of study and daily observation.

Their day seemed to be about as follows: When the first rays of sunlight gilded the tops of the trees in which they roosted, they rose as if with the sound of a signal gun, and poured from the tops of the trees literally as though they were a swarm of bees. The air was black with them.

They hovered like a dense, black cloud for a moment, then mounted high in the air, and flew straight west. In ten minutes there was not a Robin to be seen. Evidently they had some feeding-place far to the west. No matter what the weather,—and I watched them from November till the following April,—they went through the same maneuver. Doubtless a naturalist would have known the average flight the Robin makes for his food-supply, and could have estimated where they spent their days. Certainly, however, they scattered as they flew away, so that there were not many in a place where they alighted, or there would have been some mention made of them in our Saint Louis papers. As the days grew shorter, they timed their exodus to suit the hour. If it were cloudy, they left at broad day.

The only time any of them stayed about was during one or two very heavy wind- and snow-storms which marred an otherwise perfect winter. At four o'clock in the afternoon, not one Robin was to be seen. At ten minutes past four, the first big, fat, red-breasted fellows catapulted overhead. Until sunset, they passed steadily and surely, and just as the last rays of the sun gilded the tree-tops, the last few hundred flew chattering over, and disappeared in the black cedar tops.

During the entire winter, I saw but one crippled Robin, and he appeared to be fat, and able to pick a living from along the fence rows. A careful study of their sleeping quarters showed no evidence that they were ever disturbed at night. There were no signs of any kind of woodland tragedy under the trees. No one ever

shot at them, for the whole neighborhood was too much interested in observing them. The oldest settler of the community did not remember any such Robin winter colony, and many were the theories advanced to account for the unusual phenomenon. As the winter wore away, they seemed to grow fatter, and their coats took on a brighter color.

They stayed here till spring. April 20, we had a deep spring snow-storm, which did not hurt any of the tender green already spread over woods and hills. After that they scattered rapidly, their primal instinct beginning to assert itself. Gradually fewer and fewer came home to the cedars at night, until, at the time when birds usually mate, none remained. The Robins which finally built their nests in those woods were from an entirely different colony.

Of the many theories advanced to account for the location of the colony, the following was the most plausible: The Robins came from the extreme northern limits where they summer and nest. In their southern flight they found this place, and some stopped for a few days. The shelter of the cedars proved to be so good that they were joined by more and more birds, till the colony took on the proportion it had attained at the time when we first observed it. In their excursions westward for food, the birds found such an abundance that there seemed to be no scarcity from day to day. It may have been possible that some subtle instinct told them this would be an open winter, or it may have been that they simply drifted along and stayed from one day to the next, because shelter, food, and water were adequate.—EDITH C. M. BRANDEIS, *San Diego, Cal.*

Robins on an Ocean Beach

The unbroken sweep of the Atlantic Ocean upon the beach at Watch Hill, R. I., causes it to be a favorite resting-place, in migrating time, of Turnstone, Plover, Semipalmated and Least Sandpipers, and various sea birds, which find

considerable food among the sea plants washed up by the surf. On August 20, 1912, a number of unusually large, dark-colored birds could be seen running along the beach, which, upon closer inspection, proved to be Robins. They did not mingle with the little shore birds, but followed the retreating waves in much the same manner as these, and evidently ate the same food.

The Robins looked very much out of place on the wet sand, but seemed absolutely at home there. Owing to the number that could be seen at one time, it was evident that they came from a migrating flock.—J. W. LIPPINCOTT, *Bethayres, Pa.*

Kingbirds Eating Sassafras Berries

Is it commonly known that the Kingbirds are fond of the fruit of the sassafras? There is a sassafras tree near the entrance gate at my country-place at Stamford, Connecticut, which bears a heavy crop of fruit every year, and about the last of August the Kingbirds gather in numbers, spending the entire day in the tree, and strip it entirely of its fruit. This seems an unusual taste for a bird so highly insectivorous as the Kingbird, and the sassafras fruit is not delectable from our standpoint. At the time when they are gorging themselves with sassafras berries, they seem to devote little time to catching insects, and when flying out of the tree on our approach they immediately return. For several years I have noted that the Kingbirds were stripping this tree completely of its fruit, although I have allowed it to remain partly for decorative purposes when it is brilliant with berries. I have not observed any other birds in the tree; in fact, I believe that the Kingbirds would not allow other birds to visit it.—ROBERT T. MORRIS, *New York City.*

Goldfinches in Massachusetts

In the May-June number of BIRD-LORE I saw a request for information regarding the increase of Goldfinches. The past

summer, they have outnumbered all previous years since I came here to live in 1876.—(MRS.) MARY R. STANLEY, *North Attleboro, Mass.*

Goldfinches in the Ozarks

In answer to an inquiry in the May-June issue of BIRD-LORE, it may be interesting to the eastern ornithologists to know that in 1911 there was a great abundance of Goldfinches in the Ozarks of southern Missouri, to the extent that it was commented upon by those usually not interested in birds at all. During the spring of 1912, however, there have been a scattering few, or none, in this locality.—AMY R. HAIGHT, *Brandsville, Mo.*

Chat Nesting in Vermont

On the afternoon of June 19, 1912, while walking through a bushy tract amidst some meadows in Bennington, Vt., I was startled by the notes of a bird unfamiliar to me. After chasing about for a few minutes, I found the author of the song to be a Yellow-breasted Chat. This observation was reported to Dr. L. H. Ross, who visited the place the next morning and verified the report, seeing both the male and the female birds. A little later the same morning, the writer was rewarded by the discovery, in some bushes, of the nest, which contained three young and an egg. In the afternoon, when the nest was visited, the egg was found to be hatched. Daily visits were made to the nest until June 26. By the 30th, all the young birds had flown from the nest into the surrounding bushes.

According to the State Ornithologist, this is the first authentic nesting record of the Yellow-breasted Chat in Vermont. The nest is now at the University of Vermont Museum.—CHARLES S. HITCHCOCK, *Bennington, Vt.*

Intelligence of Grackles

An interesting thing was noticed repeatedly during the summer. Grackles

were noticed taking a large piece of dry bread or toast from the feeding-tray. They would carry it to a large crock containing water, and then dip it into the water before eating it. One was seen to dip the bread *six times* before eating it. They did this repeatedly; it was observed on at least ten different days.—FRANK W. ALDRICH, *Bloomington, Ill.*

Thirtieth Annual Congress of the American Ornithologists' Union

The Thirtieth Annual Congress of the American Ornithologists' Union was held in Cambridge, Massachusetts, November 11-14, 1912. At the business meeting of Fellows, held at the Brewster Museum on the evening of the eleventh, the following officers were re-elected: President, Frank M. Chapman; Vice-Presidents, A. K. Fisher, H. W. Henshaw; Secretary, John H. Sage; Treasurer, J. Dwight, Jr.; Counselors, Walter Deane, William Dutcher, F. A. Lucas, W. H. Osgood, C. W. Richmond, T. S. Roberts, Witmer Stone.

The following were elected Fellows: C. William Beebe, Edward Howe Forbush, Louis Agassiz Fuertes. The Members elected were Frederic H. Kennard, John C. Phillips, Miss Althea R. Sherman, Alexander O. Wetmore, Norman A. Wood. There were also elected 184 Associate Members.

The open sessions of the Congress were held November 12-14 in the University Museum, and were attended by 115 members of the Union, and a large number of others interested in the study of birds.

The members of the Union were entertained at luncheon daily by the Nuttall Ornithological Club, and at receptions tendered by Mr. William Brewster and Mr. and Mrs. Charles F. Batchelder, while on the fifteenth they were the guests of Mr. and Mrs. John E. Thayer, at Lancaster, where they were given an opportunity to see the admirable museum which Mr. Thayer has established there.

This institution is ideal and unique. In it one may study a series of Great Auks' skeletons or a group of Chipping Sparrows. In other words, it is equipped both for the specialist and the opera-glass students, and through the generosity of its founder, who is also its Curator, both are given abundant opportunity to examine its treasures.

There are many museums in this country to a greater or less extent dependent on the support of patrons of the arts and sciences; but, so far as we are aware, the Thayer Museum stands alone as an institution open to the public, in which but one individual has supplied the funds for the building and its collections and, at the same time, is its responsible and active scientific director.

PROGRAM

Notes from Northern Labrador, by A. C. Bent, Taunton, Mass. Some Labrador Notes, by Charles W. Townsend, Boston, Mass. Notes on the Migrations and Habits of some Long Island Shore Birds (illustrated by lantern-slides), by Francis Harper, College Point, N. Y., and John Treadwell Nichols, New York City. On the Present Status of the Bobolink, or Rice-bird, in the South (illustrated by lantern-slides), by Edward Howe Forbush, Westboro, Mass. Queer Nesting-sites of the House Wren (illustrated by lantern-slides), by Wilbur F. Smith, South Norwalk, Conn. A New Sub-species of Crossbill from Newfoundland (illustrated with specimens), by A. C. Bent, Taunton, Mass. The Nest Life of the Sparrow Hawk, by Althea R. Sherman, National, Iowa.

Informal Notes on the Work of the Field Museum in South America, by W. H. Osgood. Further Observations on Colombian Bird Life (illustrated by lantern-slides), by Frank M. Chapman, New York City. Propagation and Restoration of American Wild-fowl (illustrated by lantern-slides), by Herbert K. Job, East Haven, Conn. Notes on the Present Breeding of White Egrets in the United

States (illustrated by lantern-slides), by T. Gilbert Pearson, New York City.

Passenger Pigeon: Report of the Year's Work, by C. F. Hodge, Worcester, Mass. Problem of Domesticating the Ruby-throated Hummingbird, by Katherine E. Dolbear, Worcester, Mass. Notes on the Panama Thrush-Warbler, by Hubert Lyman Clark, Cambridge, Mass. Report of Progress on the 'Life Histories of North American Birds,' by A. C. Bent, Taunton, Mass. The Value of Bird-Study in a Limited Area, by Alice Hall Walter, Providence, R. I. Some Notes from Sheepshead Bay and Manhattan Beach, New York City, by George E. Hix, New York City. Concealing Action of the Bittern, by Walter B. Barrows, East Lansing, Mich.

What the American Bird-Banding Association Has Accomplished the Past Year (illustrated by lantern-slides), by Howard H. Cleaves, New Brighton, N. Y. A Biological Reconnaissance of the Okefenoke Swamp: The Birds (illustrated by lantern-slides), by Albert H. Wright, Ithaca, N. Y., and Francis Harper, College Point, N. Y. The Red-winged Blackbird: A Study in the Ecology of a Cattail Marsh (illustrated by lantern-slides), by Arthur A. Allen, Ithaca, N. Y.

The Flight of Birds, by Alexander Forbes, Milton, Mass. The A. O. U. Check-List (third edition), by Louis B. Bishop, New Haven, Conn. A Glimpse at the Home-Life of *Larus marinus* (illustrated by lantern-slides), by Howard H. Cleaves, New Brighton, N. Y. The Present Status of the Heath Hen (illustrated by lantern-slides and specimens), by George W. Field, Boston, Mass. Two Flycatchers of the Genus *Empidonax* New to the Fauna of South Carolina, by Arthur T. Wayne, Mt. Pleasant, S. C. Eighteen Species of Birds New to the Pribilof Islands, Including Four New to North America, by Barton W. Evermann, Washington, D. C. A Study of the House Finch, by W. H. Bergtold, Denver, Col. The Status of the Extinct *Meleagridæ*, by R. W. Shufeldt, Washington, D. C.

Book News and Reviews

OUR NATIVE BIRDS OF SONG AND BEAUTY.

Being a Complete History of all the Song Birds: Flycatchers, Hummingbirds, Swifts, Goatsuckers, Woodpeckers, Kingfishers, Trogons, Cuckoos, and Parrots, of North America. By HENRY NEHRING. . . . With thirty-six colored plates, after water-color paintings by Robert Ridgway, A. Goering and Gustav Muetzel, Milwaukee. George Brumder. 4to. Vol. I, 1893, L + 372 pp. 18 pls. Vol. II, 1896, 452 pp., 18 pls. [Popular Edition.] Germania Publishing Company, Milwaukee, Wis. \$4.50.

The publication of a popular edition of Nehrling's 'Native Birds of Song and Beauty,' at a price which places it within the reach of everyone, is an event calling for more than passing notice.

The scope of this work is indicated by its title; and, while we may question its presenting "a complete history" of the species treated, it does present in its 870 odd pages a vast amount of information concerning them.

The present appears to differ from the original edition only in the character of the binding. In scientific nomenclature it is somewhat out-of-date; but fortunately the common names of our birds are less subject to change than their technical ones, and, being much the same today that they were twenty years ago, the book may be used without a table of synonyms; while the biographical matter which distinguishes the work is as valuable now as it was when published.

The thirty-one colored plates, figuring some thirty-six species, vary in excellence. Those by Ridgway are faithful portraits based on life studies; those by Muetzel show great talent as a bird portrait-painter, and much skill and artistic ability in grouping several species in one plate. The plates are produced by some lithographic process giving more pleasing and more accurate results than we are accustomed to see in this country. They are issued by the publishers in a paper-bound volume, apart from the text they were designed to accompany.—F. M. C.

BIRDS OF THE PACIFIC SLOPE OF SOUTHERN CALIFORNIA. By GEORGE WILLETT. Pacific Coast Avifauna No. 7. Cooper Orn. Club, Hollywood, Calif. Roy. 8vo., pp. 1-122.

The area covered by this paper includes "all of Santa Barbara and Ventura Counties, Los Angeles County south and west from the Liebre Mountains, Sierra Pelona and Sierra San Gabriel, San Bernardino County, south and west from the Sierra Madre and San Bernardino Ranges, all of Orange County, Riverside County west from the San Jacinto Range, and San Diego County west from the Volcan and Cuyamaca Ranges; also the eight islands of the Santa Barbara group. . . ."

From this widely diversified region, Mr. Willett records 377 species and subspecies of birds, a greater number than has been reported from any Atlantic Coast state except New York. The subjects of local distribution, time and manner of occurrence, comparative numbers, and nesting season are dealt with in the thoroughly workmanlike manner which proclaim an authoritative publication.—F. M. C.

THE EXPERIMENTAL METHOD OF TESTING THE EFFICIENCY OF WARNING AND CRYPTIC COLORATION IN PROTECTING ANIMALS FROM THEIR ENEMIES. By W. L. MCATEE. Proc. Acad. Nat. Sci. Philadelphia, 1912, pp. 281-364.

Theories in explanation of the coloration of animals have concerned insects more frequently than any other class of animals. These small, helpless creatures have been commonly believed to escape from their enemies by the possession of certain color characteristics which may, for example, render edible species inconspicuous (protective coloration), and inedible or ill-tasting species conspicuous (warning coloration). To test such theories, various experiments have been made from time to time by offering insects to captive birds, amphibia, or reptiles, and Mr.

McAtee's paper is, in the main, a critical review of these experiments.

He concludes that (1) "they are very inconsistent;" that (2) "they have been misinterpreted," and that (3) "they are not trustworthy guides to behavior under natural conditions." The last-named objection he dwells upon at length, supporting it with numerous observations made by himself and others, and he concludes that "since the feeding habits of an animal in captivity may vary widely from its known habits in the natural state, there is no avoiding the conclusion that the results obtained under experimental conditions do not indicate the part the animal might play in natural selection."

The paper is accompanied by a full bibliography, and is an important contribution to a subject in which theory, based on insufficient evidence and expressed in terms of human experience, has long molded current opinion.—F. M. C.

NATIONAL RESERVATIONS FOR THE PROTECTION OF WILD LIFE. By T. S. PALMER. Circular No. 87: Biological Survey, U. S. Dept. of Agriculture. 32 pp; 5 text maps.

The Biological Survey renders the cause of the conservation of our wild life a service of the highest value in issuing, from time to time, small bulletins which so summarize the subject of which they treat that the public is kept informed of the various factors which are potent in this field. Ignorance in regard to the game-laws and of organizations designed to enforce them, for example, has been largely decreased through the widespread circulation and republication of the bulletins of the Survey.

The present Circular lists ninety-five reservations on which wild life is preserved. Of this number no less than fifty-six are bird-reservations, all of which, beginning with Pelican Island in 1903, have been formed in the past ten years. A feature of this pamphlet of especial value to naturalists is a faunal bibliography which tells us just what has been

published about the life of the reservations in question.—F. M. C.

ANNOTATED LIST OF THE BIRDS OF ONEIDA COUNTY, N. Y., AND OF THE WEST CANADA CREEK VALLEY. By EGBERT BAGG. Trans. Oneida Hist. Soc. XII, 1912; pages 16-85.

Since its appearance in 1886, Ralph and Baggs' 'Birds of Oneida County' has been the standard faunal paper of the birds of that part of New York state. The junior and surviving author now brings the list up to date, adding 33 species to the 224 contained in the original publication, and much additional information in regard to distribution and habits.

The species included are grouped in the introductory chapter as follows: Residents, 27; summer residents, 118; transients, 27; winter visitants, 12; accidental visitants, 28.

Dr. Bagg's intimate knowledge for over a quarter of a century of the bird-life of the region of which he writes, places him in a position to compare with authority present and past conditions, but we do not find such a comparison in his excellent paper.—F. M. C.

THE BIRDS OF GOD. Parallels of Man in the Feathered Creation. A Portfolio of Anecdotes. By THERON BROWN. Boston. Am. Humane Society. 1912. 16mo. 318 pp. 5 col. pls.

This is a collection of short stories or incidents designed to illustrate the effect of birds on the mind of man in the formation of myths and legends, in establishing certain emblems, in pointing a moral or adorning a tale. The book contains much that is of interest and should appeal particularly to those whose sympathy with birds leads them to see much that is human in bird-life.—F. M. C.

The Ornithological Magazines

THE AUK.—The contents of the July 'Auk' are unusually varied. In 'Bird Genealogy,' by Dr. C. W. Townsend, some evidences of their ancestry are

deduced from the habits of birds. The climbing about of young Herons and the swimming of passerine species suggest "the primitive reptilian scramble," according to our author, who also ventures some other hypotheses, among them the probable evolution of a new species of Myrtle Warbler through "clannishness."

There is much to commend in the care with which 'A Reconsideration of the American Black Ducks,' etc., is handled by J. C. Phillips, who finds the Florida Duck (*fulvigula*) and the Mottled race (*maculosa*) indistinguishable, as are also Abert's Duck (*aberti*) of Mexico and the Hawaiian species (*wyvilliana*). It is illustrated with a half-tone plate.

It is to be hoped that H. G. Wright's 'Morning Awakening and Even-Song' will stimulate further observations along similar lines, for his pioneer work merely touches a large field. We wish he had tabulated, for convenience, some of his results; but congratulate him, the early bird, and the worm, on being willing to keep such unreasonable hours.

'October Birds of the Headwaters of the Gila River, New Mexico,' by Dr. W. H. Bergtold, is a local list; and 'Notes on the Birds . . . of Western North Carolina,' by S. C. Bruner and A. L. Field, is another of the usual type.

In 'The Hawaiian Linnnet' (*Carpodacus mutans* Grinnell), J. C. Phillips questions the appropriateness of the name, and in 'The Introduction and Acclimatization of the Yellow Canary on Midway Island,' W. A. Bryan states that it has proved a complete success.

A review of the 'Early Records of the Carolina Paroquet,' beginning with 1587, by A. H. Wright, quotes many authors; a bit of life history of Palmer's Thrasher is told by E. F. Stafford; and O. Bangs describes 'A New Subspecies of the Ruffed Grouse' (*thayeri*) from Nova Scotia.

On page 380 are listed the additions to the A. O. U. 'Check-List,' proposed since the 1910 (not "1900") edition. The species added are 4, subspecies 11, while rejected claimants number 22. 'General

Notes' contains, among other things, the discovery by S. W. Brooks of an overlooked specimen of the Labrador Duck in a storage case of the Boston Society of Natural History. There are also corrections of a number of faulty records of several other species, which have not even the excuse of being opera-glass observations. The reviews are numerous, and the excellent feature of gathering together titles from ornithological and other journals is continued in this number. Everybody would do well to read the editor's remarks on nomenclature, on p. 431.

A number of half-tones enrich the October 'Auk,' which now completes the twenty-ninth consecutive year of publication, as flourishing as ever under the guidance of its new editor. The first two articles emphasize some of the unusual dangers that menace migrating waterfowl. A. R. Cahn writes on 'The Freezing of Cayuga Lake in its Relation to Bird Life,' and J. H. Fleming on 'The Niagara Swan Trap.' Nearly a dozen species of Ducks, and Grebes and numbers of each were victims, when the lake froze over completely, in February, 1912, and Mr. Cahn shows some good half-tones illustrating the conditions. The "Swan Trap" is nothing more nor less than Niagara Falls itself, where the huge birds settle in the quiet river above, and are swept into the rapids and over the falls in considerable numbers; and this happens every year.

'Methods of Estimating the Contents of Bird Stomachs,' by W. L. McAtee, is a careful weighing of the pros and cons of several methods that have been employed. R. C. Harlow contributes a local list of birds from Center County, Pa; and there is one of the birds of Montgomery County, Va. by E. A. Smyth, Jr., which shows evidence of unusual care in its preparation. Photographs of a freshly killed Black-capped Petrel lend special interest to the latter list. R. M. Strong's article on the Red-breasted Merganser is a record of careful observation, illustrated by several half-tones.

Mr. F. H. Allen enters the controversial

arena with 'Remarks on the Case of Roosevelt vs. Thayer, with a Few Independent Suggestions on the Concealing Coloration Question.' We notice, too, a letter from J. Grinnell, complaining brusquely about the A. O. U. Check-List, to which W. Stone makes a quiet and dignified reply.

The death of the distinguished German ornithologist, Wilhelm Blasius, and that of the engraver, J. G. Keulemans, whose fine colored plates of birds are known the world over, are recorded among 'Notes and News.'

To errata might be added a good many other slips of the proof-reader, but we will now call attention only to p. 388, line 16, where "Dennett" should read Sennett.—J. D., Jr.

THE CONDOR.—The September number of 'The Condor,' although an unusually large one, contains only three general articles. The first of these, Ray's 'Discovery of the Nest and Eggs of the California Pine Grosbeak,' is one of the most valuable contributions to the life history of the West Coast birds which has been made in recent years, and is comparable with Finley's notable account of the life history of the California Condor, which appeared in 1906 and 1908. Thirty pages, illustrated by seventeen half-tones, are devoted to the Grosbeak, a review of its history, and an account of the finding of the nest, all admirably presented with a wealth of detail. In the introduction is given a table showing only sixteen recorded occurrences of the bird since the first specimen was collected by Dr. J. G. Cooper, in Johnson Pass, California, Sept. 22, 1863. As the year 1910 has been made memorable in the annals of California ornithology by Ray's discovery of the eggs of the Gray-crowned Rosy Finch, on Pyramid Peak, so 1911 will be notable for the even more interesting find of the eggs of the Pine Grosbeak. On June 19, while the ground was still covered with snow, two sets, each containing three eggs, were collected not far from Pyramid Peak, at an altitude of 8,000 feet. The

first nest was made of rootlets, and was built in a fir sixteen feet from the ground; the second was placed in a hemlock, thirty-five feet from the ground, and was composed of fine, light-colored grasses, resting on a platform of small dead hemlock twigs and a few stems. The eggs are described as Nile-blue, marked with black or deep brown spots and blotches, roughly arranged in the form of a wreath, chiefly around the larger end, and varying in size from .98 x .71 to 1.06 x .68 in.

Howell's 'Notes from Todos Santos Islands,' opposite Enseñada Bay, Lower California, include observations on 32 species made during a five-days visit, from April 15 to 20, 1910. The only water-birds breeding on the two islands were the Western Gull, Farallon and Brandt's Cormorants, and the California Brown Pelican.

Jewett's paper on 'Some Birds of the Saw Tooth Mountains, Idaho,' contains notes on 35 species observed in the vicinity of Ketchum and Rook Creek, between October 24 and December 20, 1910. With the exception of the Western Robin, these were all winter residents.

The number closes with the annual 'Directory of the Cooper Ornithological Club,' containing the names and addresses of 6 honorary and 410 active members.—T. S. P.

Book News

'Air Craft' (New York) for September has an article (pp. 212-215) by Will Simmons on 'The Gull versus the Wind.' It is illustrated by original diagrams and sketches, and is distinctly an important contribution to the study of a subject which still presents much that is but little understood.

The program of the Hartford Bird Study Club for 1912-13 presents a definite program for each of the thirty-five stated meetings of the Club from September 17, 1912, to June 21, 1913. The Club is to be congratulated on possessing a board of managers which can plan so attractive a series of papers and field meetings.

Bird-Lore

A Bi-Monthly Magazine

Devoted to the Study and Protection of Birds
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Contributing Editor, MABEL OSGOOD WRIGHT

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Bird-Lore's Motto:

A Bird in the Bush Is Worth Two in the Hand

ALTHOUGH the report of the Treasurer of the National Association of Audubon Societies shows a slight deficit, it is, nevertheless, the most encouraging document which the occupant of that office has presented. It appears that the income of the Association for the year ending in October, 1912, reached nearly \$60,000, or over 50 per cent more than that of the preceding year, and these figures fairly express the increased activities of the Society during the period in question.

The legislative and warden work have been zealously carried forward, but it is in the field of education that the greatest advance has been made. Here two liberal donations have enabled the Association to place sets of colored plates, outlines for coloring, and educational leaflets in the hands of 28,000 children, each of whom had expressed a desire for them by the payment of ten cents, while the 1,600 teachers in whose classes these children were enrolled were supplied with leaflets and with BIRD-LORE. By thus coöperating with an established school system, a maximum result is obtained at a minimum cost—less than fifty cents per pupil.

Even if this phase of Audubon work be not extended, the fact that every year nearly 30,000 children are given elementary instruction in the value and beauty of bird-life is in itself an achievement which eventually must exert a widespread influence in our attitude toward birds; and once this fact is realized, we believe

that the fund available for this purpose will be so increased that the Society can extend its work to every part of the country.

One far-seeing patron of the Association has contributed a fund for use in Alaska, wisely realizing that the time to arouse an interest in one's feathered neighbors is while we still have them with us. It is through the generosity of this donor that, during the coming year, BIRD-LORE will be enabled to present its readers with a series of colored plates by Allan Brooks, the first of which, illustrating the Willow Ptarmigan, appears in this issue. The text forming the educational leaflet accompanying these plates will be prepared by ornithologists who by actual field experience are qualified to write of the bird illustrated, and the leaflets therefore may be considered authentic biographies of real ornithological value. Joseph Grinnell, for example, writes of the Ptarmigan; while E. W. Nelson will treat the Emperor Goose, and Dr. C. W. Townsend the Crested Auklet.

Meanwhile, the regular series of educational leaflets, with plates by Horsfall, will be continued, the Ruffed Grouse, Green Heron, Brown Thrasher, and Catbird being among the species which will be treated during the year. Here, also, it is proposed to have the text equal the plates in value, and we shall thus in time have issued a series of adequately illustrated biographies of our common birds.

THE current issue of BIRD-LORE adds two chapters to the growing volume which records successful attempts to overcome the shyness of birds by winning their confidence. That Gulls, particularly hungry Gulls, should quickly learn to trust the hand which feeds them is doubtless to be expected, and many instances of their establishing more or less friendly relationships with their human hosts are on record; but that a bird so shy and suspicious as the Wild Turkey should in a short time become semi-domesticated about a home, in a region where the natural food supply is so abundant that it is in no

way dependent on man's bounty, is surely a striking illustration of how quickly a truly wild creature may lose its fear of man, once it realizes that no ground for fear exists.

IN the death of Bradford Torrey, which occurred at Santa Barbara, California, on October 7, 1912, the group of American literary naturalists loses one of its most distinguished figures. Torrey's work was marked by its high literary excellence as well as by its scientific accuracy. His outlook on nature was sane and normal and his studies presented her everyday moods. With no attempt to compel attention through the exceptional or unusual, or through the humanization of his subjects, Torrey holds one's interest because of his power of observation, his sincerity, his gift for expression, and because, with no hint of egotism, his writings, nevertheless, clearly reveal the quaint and attractive personality of their author.

Going to California several years ago for a season's visit, Torrey yielded to the charm which this state has for the nature-lover and prolonged his stay to the time of his death. In our regret that he was not spared to do for California what he has done for New England, it is at least some consolation to know that the results of his observations during the period of his residence on the Pacific Coast were left in form for publication.

OF GREAT ornithological interest is BIRD-LORE's discovery of a score of negatives recording the appearance in many poses, including even that of incubation, of the Passenger Pigeon. The birds, it is true, were photographed in captivity; but, they were in such excellent health and plumage that, so far as appearance and actions go, they might well have been wild birds.

TO BE impressed with the value of the facts which the bird photographer is filing for reference by future ornithologists, one has only to think with what eagerness bird-students of today would examine

photographs of Passenger Pigeon roosts or nestings or, particularly, of a migration flight of these birds, when the passing myriads are said to have partially obscured the sky for hours.

Not only have we no such records, but, so far as we are aware, few if any adequate photographs of even captive Passenger Pigeons have been published. Bird artists of this generation, therefore, look in vain for authoritative material on which to base drawings of this lost species, and there is consequently cause for congratulation in the existence of these camera portraits, most of which will be published in BIRD-LORE during the coming year.

FOR the use of students there have been deposited in the Howard Memorial Library of New Orleans 'Bird Migration Records' from 1903 to the present.

These were principally made by Mr. H. H. Kopman and Messrs. A. and W. B. Allison, and others.

So little has been written on the birds of Louisiana that these form an important contribution on the natural history of the state.

A Portland, Maine, paper reports the slaughter by two local gunners of twenty 'Jack Curlew,' which it states are worth two hundred dollars, and 'warmly congratulates' the hunters, Clinton T. Swett and George Darton, on their good fortune. Later it was discovered that the birds were not the "rarer Eskimo Curlew;" but it was evidently not the fault of the 'sportsmen' that they did not do their best to bring a fast-vanishing bird near to the verge of extinction, while the attitude of the paper in question toward the subject of bird-protection is well expressed by the following paragraph:

"A few Jack Curlews have been shot every year by gunners along the New England coast, but it is believed that they will soon follow the Eskimo bird to extinction or near extinction, and it is doubtful if ever another bag such as that brought in by Messrs. Darton and Swett will be brought into this city."

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the editor, at 53 Arlington Avenue, Providence, R. I.

THE OPPORTUNITY OF THE AUDUBON SOCIETY

NOTE.—At the request of the Assistant Superintendent of Schools of New York City, whose able and comprehensive address on 'Nature-Study in the Schools' formed the basis of the discussion of this important subject at the afternoon session of the annual meeting of the National Association of Audubon Societies, October 29, and, with the approval of those present, the following excerpt from a paper presented on this occasion by the writer is offered for the consideration of all State and affiliated Audubon Societies. It is hoped that frank and detailed replies to the subjoined questions will be received from all who are interested in furthering bird- and nature-study, either through the Audubon Society or by other means.

1. Does your State Audubon Society know *how much* and *what kind* of nature-study is being introduced into the schools of your state?
2. Is there a supervisor of nature-study in your state, or in any single town or city?
3. Do teachers welcome assistance in this kind of work, and, if so, have you found out in just what ways it is possible and practicable to offer them assistance?
4. Do you know what teachers' conventions are held each year in your state, and elsewhere, at large, and are you doing anything to further the interests of nature-study in connection with such educational gatherings?
5. Have you ever tried to arrange what you consider an ideal traveling-collection of nature-study material, or have you ever held a nature-study exhibit, with demonstrations of the material exhibited?
6. Have you investigated the libraries of your state, to see what is available there in the way of nature-study literature and picture collections, and loans of the same?
7. Is your State Society keeping up with the work done by other State Societies?
8. Does it exchange leaflets, charts, programs of meetings, and ideas with any society or with anyone?
9. Does it send a representative to the annual meeting of the National Association of Audubon Societies, in order to keep in touch with the work of that organization and to get new ideas, or, to the annual meeting of the American Ornithological Union?
10. Have you yet investigated the possibilities for successful nature-study field-trips in different sections of your state, or in particular localities? Can you offer teachers a list of limited areas suitable for special observations, or show them how to work up the natural history of any single limited area?
11. Have you tried starting bird-reservations on a small scale, and, if so, are they a success? What are the difficulties in establishing and managing them?
12. Is your Society getting out a helpful leaflet, chart, calendar or bulletin, at least once a year, for its members and for exchange with other Societies?
13. Is it working for new members simply to get membership fees to replenish its treasury, or is it really trying to get people to study birds and nature in the spirit of Gilbert White and Thoreau, for the love and joy of it?
14. What seems to you the most important work for Audubon Societies to do in

furthering nature-study, and the most effective methods of accomplishing it? Where and how can you get money to carry on this work?

15. Is there any larger opportunity than this offered by nature-study, both in and out of our schools, that the Audubon Society should meet?—A. H. W.

FOR TEACHERS AND PUPILS

Exercise VI: The Birds' Map of America, continued

Correlated Studies: Spelling, Geography and Elementary Agriculture

Turning back for a moment to the last exercise, let us note again that in the Arctic realm both the climate and physiographic features are everywhere much the same; although an Arctic-Alpine fauna may be distinguished to the west, and a barren-ground fauna to the east, showing that certain animals, unlike some that are peculiar to this bleak expanse, are restricted in their range.

At the most southerly limits of the Arctic realm it is never warmer than 32° Fahr.; indeed, one may roughly trace the dividing line between the Arctic and the North Temperate realms by following the course of the annual isotherm of 32° Fahr., and similarly, between the North Temperate and the American tropical realms, by the annual isotherm of 70° Fahr.

There is one interesting fact about the Arctic realm which we should not overlook, and that is the *circumpolar* distribution of certain birds, animals and plants found there. In no other part of the North American continent are the same species found *around the world*, except by accident.

Here, near the North Pole, neither climate, oceans nor plains of ice form barriers to prevent them from being distributed completely around the Pole. The reason for this is a story by itself, which we shall take up in some future exercise.

The North Temperate realm comprises the larger part of North America, and is synonymous with the North American region, since it is made up of a single, continuous land-area, unlike the American tropical realm, for instance, which contains two distinct regions, widely separated by water: namely, the Antillean and the Central American regions.

The North American region, which extends from the annual isotherm of 32° Fahr. to that of 70° Fahr., is divided into the cold and the warm temperate subregions. We have already studied the former, and learned something of the vast transcontinental belt of coniferous forests which distinguishes it. This subregion, we remember, contains two large faunal areas, running parallel with each other from ocean to ocean; the Hudsonian, where the timber-line begins and arctic conditions disappear, and the Canadian, where agriculture is generally possible and profitable.

In this subregion there are also two small faunal areas lying well up on the

northwestern Pacific coast, the Sitkan and the Aleutian, the names of which suggest their location. These relatively small areas differ from the larger ones chiefly in minor conditions. The matter of humidity in the Sitkan area, due to frequent storms and dense fogs along the coast, renders the climate heavy, moist and sunless much of the time, exactly the reverse of what we shall find farther south in arid places. By reason of this abnormal amount of moisture, the plumage of the birds found there is much darker than in adjoining faunal areas, where it is drier and the sun shines more.

Roughly speaking, the warm temperate subregion includes the Mexican tableland and all of the United States, except first, the cold temperate heights of the great mountain-ranges, and second, the tip of Florida, a narrow strip of coast-line along southern Texas, an even narrower strip along the eastern coast of the Gulf of California and the extreme end of Lower California, which belong to the American tropical realm.

The first thing which strikes the eye, in looking at a faunal map of North America, is the diversity of this warm temperate belt. Along the one hundredth meridian, a little to the west of the Mississippi River, may be placed an imaginary line, to indicate that at about this point there is a decided difference in the amount of the annual rainfall, from east to west. East of this line we speak of *humid* conditions; and, west of it, of *arid* conditions. By measuring the number of inches of rain falling in any locality during a year, one may get an idea of the degree of its humidity or aridity. It is easy to see why certain crops cannot be successfully grown in the East, which flourish in the West, and why arid lands must be irrigated before anything but desert vegetation will thrive on them.

Here, in our own country, we have one of the most interesting and important problems of modern civilization to work out, learning what cereals, fruits and crops may be grown in different places. Not only are all kinds of plants affected by climatic changes, but also, to a less degree, birds and other animals. We must, therefore, distinguish between the East and the West, the gulf and ocean coasts, the great plains, plateaus, and desert and wooded areas of this highly diversified warm temperate subregion.

Just south of the Canadian fauna occurs a transition zone, which is broader and more connected in the eastern than in the western United States. It is called the Alleghanian fauna, and extends from inland Nova Scotia, over most of New England, New York, Pennsylvania, and along the Appalachian mountain system as far south as Georgia and Alabama, on westward through southern Ontario and Michigan, all of Wisconsin, central and southern Minnesota, over the northern two-thirds of the Dakotas, northern and eastern Montana, Wyoming, and part of Nebraska, up into Assiniboia, Manitoba and the edge of Alberta, taking in the Saskatchewan plains district, and farther west appearing in broken islands throughout the great mountain ranges as far south as Mexico. The eastern part of this transition belt is

humid, while the less-connected western part is partly arid and partly humid. It is an important area to keep in mind, because it marks the transition from cold to warm temperate conditions.

Here many northern plants and animals find their most southern extension of range, and many southern plants and animals their most northern extension. There are not so many forms which are peculiar to this great belt as in the other areas we are studying; still there are three faunal divisions of it, which may be kept in mind, that will help us to understand better the conditions of its climate and physiography. These divisions are: (1) the eastern Alleghanian; (2) the western arid; (3) the Pacific coast humid.

Agriculture flourishes in the Alleghanian zone, but it varies in character somewhat throughout these three faunal subdivisions.

Let us follow out a table of the cereals, fruits and crops which characterize these areas, and by comparing them learn something about the difference in the fertility of the soil, due to varying climate and other conditions. The following table, although subject to change and probably not complete, indicates more clearly than a lengthy description the marked limitations or great possibilities of each area:

TABLE OF ALLEGHANIAN FAUNAL AREAS

	Alleghanian No. or Kinds	Western Arid No. or Kinds	Pacific Coast Humid No. or Kinds
Wheat.....	7	4	1
Oats.....	5	5	5
Corn.....	7	6	3
Barley.....		Barley	
Rye.....		Rye	
Buckwheat.....		Buckwheat	Buckwheat
Apples.....	90	49	26
Crab-apples.....	16		
Cherries.....	31	3	13
Cranberries.....			Cranberries
Currants.....	11		6
Black Currants.....	4		
Gooseberries.....			Gooseberries
Grapes.....	17	2	3
Peaches.....			1
Pears.....	37	18	9
Plums.....	41	2	11, including Prunes
Quinces.....	Quinces		
Strawberries.....	13	3	10
Flax.....	Flax	Flax	
Hops.....	Hops		Hops
Maple-sugar.....	Maple-sugar		
Sorghum.....	Sorghum		
Sugar-beet.....	Sugar-beet	Sugar-beet	Sugar-beet
Sweet Corn.....	Sweet Corn		Sweet Corn
White Potatoes.....	White Potatoes	White Potatoes	White Potatoes
Alfalfa.....			Alfalfa

All of these products show considerable variation in their distribution through the transition belt, some growing only in the hottest parts, and others

only in the most northern or southern parts of this zone; while others are entirely absent from large tracts, or may be successfully transplanted from one tract to another. Alfalfa, for example, is not native to New England, but it may be grown there, although not so many crops of it a season can be raised as in warmer climates.

The animals and wild plants of these faunal areas differ quite as widely, as the cereals, fruits and crops, as shown below:

Alleghanian	Western Arid	Pacific Coast Humid
Chestnut	Sage Brush	Douglas Fir
Butternut	Yellow Pine	Pacific Cedar
Walnut	Creeping Barberry	Western Hemlock
Oak	Redroot	Sitka Spruce
Hickory	Scarlet Gilia	Broad-leaved Maples
Beech	Sage Hen	Tree Alders
Birch	Sharp-tailed Grouse	Madroñas
Hemlock	Green-tailed Towhee	Western Dogwoods
Sugar Maple	White-tailed Jack Rabbit	Salal
Southern Mole	Pallid Voles	Thimble-berry
Cotton-tail Rabbit	Lewis Ground Squirrel	Salmon-berry
Northern Star-nosed Mole	Clark Ground Squirrel	Dark Great Horned Owl
Brewer's Mole	Richardson's Sperrophile	Dark Spotted Owl
Varying Hare		Dark Screech Owl
Bob-white		Dark Pygmy Owl
Baltimore Oriole		Sooty Grouse
Bobolink		Oregon Ruffed Grouse
Towhee		Steller Jay
Solitary Vireo		Chestnut-backed Chickadee
Catbird		Pacific Winter Wren
Brown Thrasher		Columbia Black-tail Deer
Wood Thrush		Western Raccoon
Hermit Thrush		Oregon Spotted Skunk
Wilson's Thrush		Douglas Red Squirrel
Bluebird		Townsend's Chipmunk
		Tailless Sewellel
		Peculiar Species of Pocket Gophers and Voles

In the northwestern part of the Alleghanian or transition zone, the annual rainfall is 100 inches, and this condition of great humidity makes many species of birds much darker colored in plumage than in areas which are less wet. Farther south, the annual rainfall is not more than fifty to sixty inches, while in Oregon it drops to less than thirty inches.

The climate is very equable, extremes of heat and cold do not occur, and consequently, with the long summers and mild winters, many northern and southern forms thrive here, unlike the eastern Alleghanian area, where severe frosts in spring and fall, short summers and long, hard winters make the raising of certain crops impossible or unprofitable.

Study carefully the differences in the forms of life tabulated above, and compare them with those which will be given in the next exercise.

The Chickadee is a characteristic resident of the Alleghanian and Canadian faunas, while the Willow Ptarmigan belongs to cold temperate and arctic faunas, breeding in the far north and coming south in

winter to the northern edge of the transition zone of the warm temperate subregion.

These two species might possibly meet during the winter in the Canadian faunal area, but, since the Chickadee retreats southward at that season into the Alleghanian area, their distribution does not overlap much. In preparation for the next exercise, let us learn what and where the Mexican tableland is.

SPELLING EXERCISE

Geographical	Scientific	General	Birds, Plants, and Animals
Alleghanian	range	bleak	alfalfa
Appalachian	circumpolar	peculiar	currant
Hudsonian	region	coniferous	sorghum
Canadian	subregion	accident	hickory
Florida	zone	barrier	cedar
California	temperate	cereal	madronas
Mexico	plain	disappear	salal
Pennsylvania	desert	diversity	chickadee
Michigan	humidity	relatively	towhee
Minnesota	aridity	plumage	bobolink
Assiniboia	isotherm	synonymous	sewellel
Manitoba	meridian	imaginary	raccoon

CORRECTION: Read *saxifrage* for *saxifrage* on p. 307 of the preceding issue of BIRD-LORE.—A. H. W.

FROM ADULT OBSERVERS

Bird Notes from the Cornfield Bird Society—New Hampshire

Inspired by Mr. Baynes' work with the birds in Meriden, the city colony organized a Bird Club last fall, the principal aim of which is the stimulation and interest in bird life, especially among the children.

Every effort was made to get into close touch with the children, and the teachers of the various schools of Cornish and Plainfield were very helpful in coöperating with the officers of the Club. The children took hold of the work with the greatest enthusiasm and interest, which has been sustained all through the winter.

Before the snow came, the children, under the direction of the Club officers, went through the village and tacked wire-netting pockets on various trees, in which they placed suet. The local butcher supplied the children with suet every week, so they had an unfailing stock to draw from. They also instituted food-stations in their own yards, and made feeding-boxes in the Carpentry Class. Many and various were the devices to attract the birds, but no one ever imagined, in beginning this work, how delightful and wonderful the results would be. The joy of having these little "feathered friends" so near, feeling their dependence on you when the wild winter storms swept

over hill and valley, was an endless pleasure. Not only have the birds been the gainers by this work, but the children themselves have been given a new interest in this wonderful world of ours; the moral part of their nature has been appealed to, developing kindness, thoughtfulness and generosity,—surely a strong, fundamental groundwork for good citizens.

Observation Charts are given to the children every month, to fill in various items about the birds, and in this way systematic work is accomplished.

The picture (as illustrated) of Rachel and Leddy Daniels, speaks for itself as the result of the work. The children "tamed" the Chickadees, so that they would alight on their heads and feed from their hands many times a day.



TWO MEMBERS OF THE SOCIETY

Many nesting-boxes have been made during the winter, which have been hung up in the trees; and now all are eagerly looking forward to the birds which may build in them.

This work has not been confined to the children alone. Many "grown-ups," who in the beginning were amused at the idea of a Bird Club, have become interested in spite of themselves.

One of the Junior Members nailed boards, with suet and salt pork tied on, in the windows which had a southern and western exposure. Of course, one was put on Grandmother's window—Grandmother who never went out all winter long. "Grandmother's Bird Campus" was a perfect joy to the

dear old lady, who, as she lay in bed in the morning, loved to hear the tap, tap of the Chickadees, Nuthatches and Woodpeckers, having an early breakfast. A little brush was kept for the purpose of dusting off the snow from the campus, after every snowstorm. So the birds may give pleasure to the "shut-ins," and we can all help in the great work,—great work when we consider how valuable the birds are in their relation to agriculture and forest life.—K. C. S., *Secretary of the Cornfield Bird Club*.

[The suggestions contained in this communication embody the best and most enjoyable ways of taking up coöperative bird-study in a community. When young and old are alike interested in attracting and protecting birds, there will be small need of laws and legislators to secure the rights of our feathered population.

Are there not other clubs which can report equally successful results?—A. H. W.]

FROM YOUNG OBSERVERS

In the Orchard

If you had gone past the orchard gate over at Richard's, one morning about half-past six, you would have seen a girl of twelve scrambling under the gate. What would this girl find to do in that lonely orchard, you ask? Well, she certainly found enough and saw enough to do when she got safely under the gate.

The first thing she saw was the skeleton of a dead cat, which made the place seem rather ghostly and scary. It would have made cold chills run down some people's backs, but they didn't run down hers.

The next thing she spied was a beautifully woven Oriole's nest. Nearby she heard the sounds, *pete, petah, petah, petah*. Then, looking around, on the next apple tree she saw the beautiful Oriole itself.

Where did that sound, *quay, quay, quay*, come from? Why, it came from a bird about a foot long, with a bluish black top-knot and a bluish gray breast and back. Of course, this was a Blue Jay. The tones in which the Blue Jay spoke to her were not in the least angry. And why should the Blue Jay's tones be angry? Wait and see.

But what was that little bunch of gray fluff over in the grove in that low bush? At first you would have thought it was a nest; but how could a nest hop about as this was doing? When the fence that separated the orchard from the grove was reached, this little bunch of gray fluff was discovered to be a baby-bird that couldn't fly. Was the Blue Jay crazy? She no longer spoke in a sweet, calm way, but in a gruff, angry way. She flew from the tree she was in to the tree opposite, in a zig-zag line. As the Blue Jay flew down, she acted as if she was going to peck the girl's head off. She did this several times, all the time making a loud noise. The Blue Jay chased the girl clear to the other side of the orchard, and then left her in peace. Did you know that

this baby-bird was the Blue Jay's little one? Do you not think the Blue Jay was a brave mother?

Soon after, a bunny came in sight. He wasn't dressed as elegantly as the bunny in "Alice in Wonderland." Although he did stop, he didn't take a watch out of his pocket, to see what time it was, either, but just stared and stared at the little girl, who was a little way from him. It was not long till he said, "Good-by," and scampered out of sight, leaving her to scramble under the gate again.—CAROLYN WOODRUFF (aged 12), 252 *Goshen Ave.*, *Salem, Ohio*.

[It is a pleasure to know that girls and boys are seeing so many things out-of-doors to tell us about. A great naturalist once said that something new might be found every day within the limits of an acre of land. Here, in the orchard, there are very many different things to see. Who will make a list of all the plants, birds, insects, animals and rocks that can be found within a single acre?—A. H. W.]



THE CHICKADEE

By EDWARD HOWE FORBUSH

The National Association of Audubon Societies

EDUCATIONAL LEAFLET No. 60

Autumn has come—the waning of the year. The rising wind sighs among the lofty pines, shaking out old and yellowing needles from each tufted twig; and lightly they rain down, renewing the soft and springy carpet of the forest floor. The somber sky, with leaden, hurrying clouds, portends the coming storm; Jays cry mournfully; Crows fuss and caw; but here comes Chickadee, flitting from twig to twig, as blithe and unconcerned as if 'twere always summer.

When cold winter winds rage in the forest and snow thickens the air, Chickadee, merry and unafraid, hustles about amidst the storm, fills his little stomach with insects, and, as the dreary night shuts down, hies him to some snug, sheltered refuge where, warm and dry, he sleeps away the long winter night. Nothing daunts him but the ice-storm, which crusts the trees, and covers his food with a heavy crystal sheath. Then, indeed, he creeps to shelter, wherever it may be found, and there he stays until the storm is spent.

Many children will recall the nursery rhyme about “Little Tommy Tittlemouse,” who “lives in a little house.” The Chickadee belongs to the Titmouse family, is a near relative of the Tomtit, and, like him,
Family lives in a very little house. The Titmouse family consists of a large number of species, which are disseminated widely over the northern hemisphere and are highly valued by mankind.

Members of the Titmouse family range over North America, from the northernmost limits at which trees grow to the Gulf states and Mexico. Throughout most of the forests of this country, some form of
Range the Chickadee may be found at some or all seasons of the year; but the subject of this sketch inhabits mainly the Canadian and Transition zones of eastern North America, and, in the United States, is confined chiefly to the North, breeding south to Missouri, Illinois, Indiana, Ohio, Pennsylvania, New Jersey, and along the Appalachian Mountain chain to North Carolina, wandering somewhat farther south in winter.

In most of the northern United States, the Chickadee is the prevailing woodland bird, particularly in winter.

A hole in a decayed birch stump, two or three feet from the ground, a knot-hole in an old apple tree, in a fence-post, or in an elm, forty or fifty feet from the ground, the deserted home of some Woodpecker, a
Nest small milk-can nailed up in a tree, or a nesting-box at some farmhouse window, may be selected by the Chickadee for its home. Commonly it digs out a nest-hole in the decaying stump of a birch or



CHICKADEE

Order—PASSERES

Family—PARIDÆ

Genus—PENTHESTES

Species—ATRICAPILLUS

National Association of Audubon Societies

Educational Leaflet No. 61

pine. It is unable to penetrate sound wood, as I have seen it repeatedly try to enlarge a small hole in a white pine nesting-box, but it could not start a chip. Often the Chickadee gains an entrance through the hard outer coating of a post or stump into the decaying interior by choosing, as a vantage point, a hole made by some Woodpecker in search of a grub. The Chickadee works industriously to deepen and enlarge this cavity, sometimes making a hole nine or more inches deep; and the little bird is wise enough to carry the tell-tale chips away and scatter them far and wide—something the Woodpeckers are less careful about.

Sometimes the hole is excavated in the broken top of a leaning stump or tree, and once I found one in the top of an erect white pine stump with no shelter from the storm. I have found Chickadees' nests in small decaying pitch-pine trees, where the hard knots formed by the stumps of little limbs projected, like pegs, into the cavity from each side, extending nearly to the center. The birds, on entering the nest some nine inches below the opening, must have used these pegs as a ladder. No doubt they would have removed them had they been able.

The nest is placed at the bottom of the hole, and made of such warm materials as cottony vegetable fibers, hairs, wool, mosses, feathers and insect cocoons. Every furry denizen of the woods, and some domestic animals, may sometimes contribute hair or fur to the Chickadee's nest. One nest was made entirely of cotton, which had been placed in a nesting-box for the use of the birds.

The eggs vary somewhat in color, but are commonly white, spotted with reddish brown or finely marked with a paler shade. Both birds take turns in sitting, and the eggs hatch in about eleven days, the last one laid requiring sometimes twelve or thirteen days. The young leave the nest in about two weeks from the date of hatching.

Sometimes two broods are reared in a season.

The Chickadee has named himself. He repeats the name often with several additional *dee-dees* or *chee-dees*. Toward spring, he sometimes attempts to "pour out his soul in song," but a few jingling notes represent his finest efforts. The long, pensive, musical *phabe*, which he utters most at that season, given with the first note accented and the last falling, is regarded by many writers, as his song, but it is uttered by both sexes. The young in the nest give a faint and wheezing imitation of the *chicadee*, and, when they cry all together, their combined voices suggest the hissing of some huge snake.

It's impossible to do more than touch upon the habits of this delightful bird in a mere leaflet like this. Much has been written of its habits, but the half has never been told. An adequate history of its bright and cunning ways, its many expedients and devices, would fill a book. Its chief apparent characteristics, from a human point of view, are courage, optimism, industry, activity, helpfulness and joy

Eggs

Notes

**Habits and
Characteristics**

in life. Emerson calls the Chickadee "a scrap of valor." One gifted writer says of its activity:

"Chickadee refuses to look down for long upon the world; or indeed to look at any one thing from any direction for more than two consecutive twelfths of a second. 'Any old side up without care,' is the label he bears; and so with anything he meets, be it a pine-cone, an alder catkin, or a bug-bearing branchlet; topside, bottomside, inside, outside, all is right side to the nimble Chickadee. . . . Blind-man's buff, hide-and-seek and tag are merry games enough when played out on one plane; but when staged in three dimensions, with a labyrinth of interlacing branches for hazard, only the blithe bird whose praises we sing could promptly master their intricacies."*

Although he is no fly-catcher, the Chickadee takes insects on the wing with ease, and often catches in the air those which fall from the trees or from his own clutch.

I have seen a Chickadee reach backward after a flying insect, spring after it, back downward, catch it in the air, and, turning a somersault alight on a branch below. Another swung completely around a branch, like a gymnast doing the "giant swing." Every pose possible to a bird in a tree is taken by our little acrobat. His head turns quickly from side to side, his wings and tail flirt this way and that, as he turns, twists, pecks and peers in pursuit of the insects which form the greater part of his food. Often his prying habits lead him to the hiding-place of a dozing Owl, and then, no matter how large and powerful the enemy, Chickadee raises the alarm and sounds the attack, stirring and leading the feathered mob which gathers, to execrate the common foe.

Notwithstanding his small size, this diminutive, black-capped bird is a leader. After the breeding-season, he is almost always the central figure and foremost spirit of a little band of Warblers, Nuthatches, Creepers, and Kinglets, and is frequently followed by a Woodpecker or two. In Autumn, Chickadees gather into bands of one or more families and scour the woods, searching out the most favorable localities for their food. Migrating Warblers follow their call, knowing that it always leads them to food. Chickadee knows the ground; he has spied out the land, and invites all to join in his good cheer.

Follow the Chickadee, and you will see sooner or later most of the woodland birds. But he is not, by any means, confined to the woods. He visits the orchard and shade trees, picks up crumbs about the farmhouse door, enters the woodshed, picks out borers from the firewood, and helps himself to the bacon which the farmer uses to grease his bucksaw. He confides in man to a remarkable degree. He hangs about the camp of the woodchopper, looks for the "full dinner-pail," and sometimes comes and feeds from the hand. Many times in the woods his curiosity has led him to fly close about

*Birds of Oregon, Dawson and Bowles, p. 276.

my head and peer with beadlike eyes into my face, and in numberless instances he has placed absolute confidence in those who have fed him in winter.

Chickadee is a very attentive little husband, often visits his mate while she is sitting on her eggs, and, besides relieving her of a part of this labor, frequently feeds her on the nest.

Probably there is no bird that is more beneficial to mankind than is this little Titmouse. He lives very largely on insects which are destructive to trees.

Food Even in winter, much more than half his real food consists of insects or their eggs. Myriads of the eggs of plant-lice, bugs, canker-worms, moths and bark-lice are eaten. No insect appears to be too large for him, and none apparently too small to escape his sharp eyes and his little pointed bill. If a caterpillar is too big for him to swallow, he holds it under foot and pecks out its vitals, discarding the rest. If the larva is too large and powerful to be held in this way, the bird draws it over a twig and, seizing both ends in his feet, swings back downward underneath the twig, pecking away until he has reduced the struggling captive to submission.

Many larvæ, including those of the apple moth and the gypsy moth, destructive bark-beetles, some weevils and scale insects, are killed in myriads by the Chickadee. Mr. C. E. Bailey found 1,028 eggs of the fall canker-worm moth in the stomachs of four Chickadees, and 105 canker-worm moths in the stomachs and gullets of four others. He computed that one Chickadee would destroy 138,750 eggs of the canker-worm moth in 25 days. Professor Sanderson estimates that 8,000,000,000 insects are destroyed by Chickadees each year in Michigan. My own experience, for ten years, has shown that trees may be absolutely protected from leaf-eating insects by attracting Chickadees throughout the year.

Our little Titmouse does not depend entirely on animal food, and therefore can exist when the trees are incased in ice and snow. He takes some weed seeds, picks up a little waste grain, eats the seeds of pine, hemlock, alder, and some other trees, and a few winter berries, particularly those of the wax myrtle, or bayberry. Sunflower seeds, meat, suet and nuts are relished when he can get them, but he is not known to have any harmful habits.

The best lesson we may learn from the life of the Chickadee is that of courage, cheerfulness, and industry. Among the Chickadees that came to my window to feed one winter, one had been fatally injured in some way and was slowly dying. Still, day by day, he made the accustomed rounds, busy and cheerful, but growing less active, until one morning he appeared hardly able to feed, but was brave and cheery to the last. He never came again.

Emerson says of the Chickadees:

“There is no sorrow in their song,
No winter in their year.”

THE WILLOW PTARMIGAN

By JOSEPH GRINNELL*

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 61

The word Ptarmigan is applied to several species and races of grouse-like birds comprising the genus *Lagopus*. The name was chosen appropriately, for "Lagopus" signifies "rabbit-foot," and refers to the chief character by which Ptarmigan are distinguished from other members of the Grouse family, namely, the heavy clothing of hair-like feathers which envelop the feet. In all but one of the species there are remarkable changes of plumage twice a year, through which there is acquired for the winter season a snow-white dress. This, and the fact that Ptarmigan live in the far north or on the tops of high mountains, where the climate is severe, probably gave basis for the other name, Snow Grouse, used commonly for the birds in some parts of their range, as in Alaska.

In America there are three distinct species of Ptarmigan. One of them, the White-tailed, lives upon the snowy summits of the Rocky Mountains south as far as northern New Mexico. The Rock Ptarmigan inhabits the mountainous country farther north, and, as represented by various subspecies, is found from Greenland, across the continent and on nearly every one of the long chain of Aleutian Islands. The third American species, the Willow Ptarmigan, with which the present essay is concerned, is most abundant on that level or rolling arctic prairie-land known as tundra. This tundra extends almost unbrokenly clear across North America from Labrador to western Alaska, and may be said, in a general way, to occupy the interval between the tree limit and the Arctic Ocean. In western and northern Alaska, these tundras are covered with a deep layer of moss and lichens. Here or there in 'draws' or shallow valleys, there are tracts of dwarf willow and alder. In summer the tundras are boggy, and the numerous ponds and connecting channels make traveling difficult. In winter they are frozen solidly, and the wind-driven snow packs into the depressions so that the surface is nearly smooth.

Save for black tail-feathers, almost completely concealed when the bird is at rest, and the black of bill and eyes, the Willow Ptarmigan in the winter season is pure white. When the white feathers first appear, in the fall, they possess a perceptible, though faint, tinge of pink; but this soon fades out.

The pure white winter dress is believed to make the birds so inconspicuous against the white of the landscape that they many times escape discovery by their enemies, the arctic fox and gyrfalcon, as they certainly do by the human hunter. On a day when the sky is overcast with dense haze, obscuring the direct rays of the sun, and dispersing an intense, even light, the Ptarmigan

*Contribution from the Museum of Vertebrate Zoölogy of the University of California.



WILLOW PTARMIGAN

Order—GALLINÆ
Genus—LAGOPUS

Family—TETRAONIDÆ
Species—LAGOPUS

are extremely hard to discern against the blank whiteness of their surroundings. Even when fresh foot-prints in the snow and occasional calls told of their near vicinity, I have often found myself to be within but a few yards of the birds before they would take flight with startling whirr of wings and hoarse notes of alarm. Then, as a bird would alight at some distance, it would seemingly vanish from the sight, not infrequently defying rediscovery altogether.

On the occasional cloudless day, when the sun shines unobstructedly, even white objects are brought out in sharp relief by their long, dark shadows cast upon the snow. If approached at right angles to the rays from the sun, the Ptarmigan may then be discerned at several hundred yards distance. But they are then shy, for they have a marvelous way of appearing to know whether or not the hunter is actually aware of their exact whereabouts.

During the eight-months winter season, the Willow Ptarmigan feed upon the buds and tender terminal twigs of the dwarf alder and willow; this, and practically nothing else, save that quartz gravel is regularly gathered from the river-bars where the wind bares the ground of snow.

The Willow Ptarmigan are by nature gregarious. Especially is this trait exhibited in the autumn months, when in the most northern localities a partial migration is undertaken a few hundred miles to the south, or into great valleys where more food and better cover are afforded. For the birds do show a predilection for the vicinity of brush-patches, or even tracts of stunted spruce trees in regions where these exist. Not infrequently they escape from the dash of the Falcon by taking refuge in a bush, among whose stems the snow rests lightly, and into which the frightened bird is able to plunge quite out of sight.

In the early spring, long before the thaw commences in earnest, the male Ptarmigan begin to change to a rich chestnut-brown color on the head and chest, and a bright red comb develops above each eye. For a time, in April and early May, the males, with their deep brown mantles and white bodies, are very conspicuous. They are then more noisy than at any other season, uttering, at frequent intervals until late dusk, a low, harsh 'cackle,' roughly imitated in the Eskimo name for the Willow Ptarmigan, A-käzé-rh-gäk.

The male Ptarmigan wear this special courting plumage until June, when another change, involving the whole body plumage, leads to a brown-black-and-buff plumage, which is worn until autumn. The females, meanwhile, change rapidly in early May, about the time the snow begins to disappear, to a mottled and barred, black-and-brown coloration. In this "summer protective" plumage the birds of both sexes are as difficult to see against the green, brown and gray of the open tundra as they were in winter plumage, against the white landscape.

All these remarkable changes in appearance are the result of *molt*s, by which feathers of one color fall out and new ones of a different color grow in. In the autumn, exactly the same process leads from the brown and mottled coloration of both old birds and young-of-the-year to the pure white of winter dress.

But while in the spring molt the feathers of the head, neck, and back are the first to be replaced, in the fall these are the last tracts affected; so that by the middle of October birds are to be seen with dark feathers still predominating in the head and back. This, of course, gives much the same effect as at an early stage of the spring molt.

The female Ptarmigan selects the site for her nest during the third week of May, and by the second week of June full sets of eggs are the rule. The nest is a slight depression in the moss on the open ground; usually the summit of a hummock is selected, as being a drier situation during the period of early summer rains. There is a scanty lining of dry grasses, to keep the eggs from actual contact with the saturated moss of the foundation.

The full set of eggs numbers from eleven to thirteen. They are very deeply and closely spotted and blotched with chestnut-brown, the effect being to render them difficult to distinguish from their surroundings, even when lying in plain view but a few feet from the observer. The female bird does all of the sitting, and when approached on the nest does not take flight until almost trodden upon. She then exhibits the greatest solicitude, tumbling about within a few yards of the intruder in the most distressing manner. The male bird sometimes puts in an appearance, but keeps discreetly at a much greater distance.

After the eggs are hatched, the precocious youngsters are accompanied by both parents. They then have the faculty, so like that of young Quail and Grouse, of concealing themselves at a moment's notice, while the parents attempt to call the intruder's attention elsewhere. The young are at first clothed with down, of yellow and brown shades; but before they are half-grown this is entirely replaced by loose-textured feathers, and even before half-grown they are able to fly as readily as the adults.

In summer, the Willow Ptarmigan's bill of fare includes many sorts of insects, as well as green herbs. In the fall, the abundant crops of blueberries, heathberries, cranberries, and roseapples are freely resorted to, and these fruits become again available the following spring, when the retreating snow leaves them exposed.

The reader will have already marveled at the special and useful modifications in the habits and structure of the Ptarmigan, which enable it to carry on a successful existence under such an extreme and winter climate. Perhaps the most wonderful thing about the bird is its alternating adaptations to the opposite conditions of the short summer period. Not only is the summer plumage of a totally different general color, as already described, but it is much less dense than the winter plumage. The molts, however, do not affect the feathers of every part of the body. The wing and tail feathers are changed only at the time of the fall molt which, in fact, is the only complete molt. The feathers of the feet and legs are not replaced in the spring; but, as summer advances, the old feathers become brittle and *wear* off, until midsummer

finds the birds with almost naked feet,—a heavy feathering at that season probably being not only needless but a hindrance, as it would be especially when wet.

The toe-nails in winter are so long as to project considerably beyond the generous feathering of the feet and toes. They probably serve as "ice-creepers," of great use in walking or wallowing in crusty snow. But the extraordinary thing is that in summer the old toe-nails drop off, or molt, new ones growing from the quick!

In winter plumage, one set of feathers fails to conform to the general whiteness—the tail-feathers. When the bird is at rest, the very long upper and under tail-coverts almost completely conceal these black tail-feathers, which are then closed together in narrow ranks. But, when the bird takes flight, the tail is widely spread, and a black "directive" marking flashes forth against the white background. In summer, the wing-feathers, left over unmolted from the winter dress, are unnoticed in the bird at rest; but, as the wings are spread in flight, they furnish again a conspicuous "directive" pattern against the dark landscape, the black tail-feathers being then ineffective.

With all its marvelous fitness, the Ptarmigan has much to contend with—just as much as have our southern Quail and more than our Grouse—for the birth-rate provides a sure index of the death-rate. If each pair of Ptarmigan produces an average of ten young each season, then ten out of every twelve existing at the close of the incubatory period are doomed to die within the next twelvemonth. Before the invasion of the white man to upset the natural balance, the Ptarmigan had many regular enemies—the arctic fox, the weasel, the Rough-legged Hawk, and the Gyrfalcon.

Looked at from the utilitarian standpoint, the Ptarmigan, on the far northern frontier, affords an even more important game resource than did the native birds in the early days of the settlement of the States. The weight of a Willow Ptarmigan is one and one-half pounds, so that each bird affords as much food as four or five Bob-whites.

In most of the vast northern region, conditions yet remain practically primitive so far as wild game is concerned. But, around the mining settlements of Alaska and Yukon Territory, the larger animals have been much reduced in numbers, or entirely used up. It is fairly certain that many natural enemies of the birds have been reduced to small numbers, to the great advantage of the Ptarmigan. This has doubtless served to offset the effect of the firearm, so that only in the near neighborhood of settlements has there been a notable decrease in the supply of birds.

With proper study of the situation and suitable legislation based thereon, to apply to the most thickly settled districts, the Willow Ptarmigan should constitute a valuable and permanent game resource in a country where the food-value of game-birds far exceeds that here in the states where sport is the chief element to invite pursuit.

The Audubon Societies

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Edited by T. GILBERT PEARSON, Secretary

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Eighth Annual Meeting

The eighth annual meeting of the National Association of Audubon Societies convened in the American Museum of Natural History, New York City, at 10 o'clock A.M., Tuesday, October 29, 1912.

Dr. Henry Fairfield Osborne, President of the American Museum of Natural History, and also President of the New York State Audubon Society, welcomed the members of the Association to the Museum, and called attention to the importance of the several phases of the

work of this Association and of the good which he believed it has been doing for many years.

Messrs. Frank M. Chapman and Charles Sheldon were reelected members of the Board of Directors. The Association then proceeded to elect the following members of the Advisory Board of Directors for the ensuing year:

Ralph Hoffman, Missouri.
David Starr Jordan, California.
Robert W. Williams, Florida.
Arthur H. Norton, Maine.
W. Scott Way, Maryland.
Mrs. Kingsmill Marrs, Florida.
John E. Thayer, Massachusetts.
Prof. H. P. Attwater, Texas.
Ruthven Deane, Illinois.
Abbott H. Thayer, New Hampshire.
Carleton E. Howe, Vermont.
Witmer Stone, Pennsylvania.
Amos W. Butler, Indiana.
Wm. P. Wharton, Massachusetts.
Alice W. Wilcox, Rhode Island.
C. W. Ward, Louisiana.
Howard Eaton, Wyoming.
Dr. T. S. Roberts, Minnesota.
Col. J. H. Acklen, Tennessee.
Gifford Pinchot, District of Columbia.
Frank Bond, District of Columbia.
C. G. Abbott, New York.
C. F. Hodge, Massachusetts.
Mrs. Anna B. Comstock, New York.
Mrs. Alice H. Walter, Rhode Island.
H. H. Brimley, North Carolina.
H. Tullsen, Tennessee.
Mrs. B. H. Johnson, Connecticut.
John H. Sage, Connecticut.

The report of the Secretary was presented, after which Dr. Jonathan Dwight, Jr., read his report as Treasurer of the Association. This showed a healthy condition of the finances, the total income of the Association for the year being nearly \$60,000, an increase of \$15,000 over last year. Both of these reports are printed in full elsewhere in this issue of BIRD-LORE in connection with the

reports of the Field Agents and those submitted by the various State Audubon Societies.

E. H. Forbush, Field Agent for Massachusetts, spoke on the results of the legislative efforts conducted by the Association in Massachusetts during the past year, and also outlined a recent trip which he had undertaken to South Carolina in the interests of the protection of non-game birds, with special reference to the Bobolink.

Dr. Eugene Swope, Field Agent for Ohio, spoke most acceptably on the subject of his work in that state. Other reports and discussions filled the time until noon hour. Many of the members and visiting delegates then repaired to the Metla Café, in the basement of the museum building, where luncheon was served.

The second session began at two o'clock, P.M. Mrs. Alice Hall Walters presented a paper entitled 'The Opportunity of the Audubon Societies,' which provoked much discussion of a helpful character. This was followed by an address by Hon. Gustav Straubenmiller, Assistant Superintendent of New York City Schools, on 'Nature Study in the Schools.' The speaker was asked many questions, which brought out much interesting information in regard to his experiences in teaching bird-study to children.

The Association then adjourned to a neighboring room in the building, where a lesson in nature-study was being given to a class of blind children, after which the company proceeded to a large lecture-hall where, for over an hour, they were entertained by an intensely interesting address by Dr. Homer R. Dill, of the University of Iowa. His subject was, 'The Birds of Laysan Island, Hawaii.'



YOUNG AMERICAN EGRET, ORANGE LAKE, FLORIDA, ROOKERY
Photographed by Warden O. E. Baynard

Annual Report of the National Association of Audubon Societies for 1912

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CALIFORNIA, DISTRICT OF COLUMBIA, FLORIDA, ILLINOIS, INDIANA, MAINE, MARYLAND, MASSACHUSETTS, MICHIGAN, MINNESOTA, NEW JERSEY, NEW YORK, NORTH DAKOTA, OHIO, OREGON, PENNSYLVANIA, RHODE ISLAND, EAST TENNESSEE, WEST TENNESSEE, TEXAS, VIRGINIA, WEST VIRGINIA, WISCONSIN.

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REPORT OF THE SECRETARY

INTRODUCTION

The eighth year of the life of the National Association of Audubon Societies has been attended with a strong continuance of that rapid growth which has ever marked its history. As the general public becomes more aroused to the importance of the preservation of wild bird and animal life, the opportunities for services which come to us seem to be almost without limit. So urgent in fact have been the demands for aid in many directions that often the Board of Directors has been sorely tempted to take up new lines of endeavor which would quickly lead us quite beyond our means. Disquieting as it is to see many golden opportunities go by unfulfilled, we yet have the satisfaction

of knowing that through the splendid support now being given the Association, we are each year able to increase the scope of our work and give more extensive cultivation to those fields already entered. On behalf of the Board of Directors, I herewith present to the members a summary of the activities of the Association during the past year.

OFFICE WORK

To handle the volume of the business in the office, the Secretary now requires the constant aid of eight office assistants. During the year it has been necessary again to secure additional office space. Let us take this opportunity to invite our members, and others who are interested in wild-life protection, to visit the offices at 1974 Broadway, where a hearty welcome awaits them.

FIELD FORCE

The number of field agents and lecturers has been nearly doubled during the past year, eight being employed for a part or the whole of their time. These were:—E. H. Forbush, in New England; Capt. M. B. Davis, in Texas; Wm. L. Finley, in the Northern Pacific States; Miss Katherine H. Stuart, in Virginia; James Henry Rice, Jr., in South Carolina; Dr. Eugene W. Swope, in Ohio; and E. V. Visart, in Arkansas. Too much credit cannot be given to these unselfish workers who have so splendidly represented the Association in their various fields and who are so largely responsible for the good results achieved in bird-protection in their respective states. Without exception, their work has been largely a labor of love, for in no instance has their financial remuneration been commensurate with the amount of energy given to their duties.

It is with deep regret that we have to announce the death of our noble Texas representative, Capt. M. B. Davis, who died at his home in Waco, Texas, June 18, 1912. Captain Davis has been one of our most worthy representatives since his connection with the Association, which began in 1904. We fear it will be long before his place can be filled with a worker so energetic, so persistent, and withal, so effective.

WARDEN FORCE

Perhaps in no way was the wisdom of President William Dutcher, the founder of the Association, more strikingly displayed than by his earnest insistence during the early days of our organization that we adopt a policy of establishing a strong warden force to guard from feather-hunters and eggers those colonies of water-birds threatened with extinction. This is, today, a most important feature of our work. Forty-one of these guards have been employed

during the past season; they are distributed as follows: Connecticut, 1; Florida, 8; Georgia, 1; Louisiana, 2; Maine, 14; Massachusetts, 1; Michigan, 3; North Carolina, 1; New Jersey, 2; New York, 3; South Carolina, 2; Texas, 1; Virginia, 2.

The birds in most of the colonies have had a prosperous year despite the starvation of young on some of the Maine islands, due to the failure of food-supply, and the loss of eggs and young in some of the southern Heron colonies, caused by storm-winds. The birds which are primarily receiving the benefit



WARDEN O. E. BAYNARD OF ORANGE LAKE, FLORIDA, ROOKERY
Photographed by Dr. H. R. Mills

of the wardens' watchfulness are: White and Brown Pelicans; Herring, Western and Laughing Gulls; Common, Arctic, Caspian, Royal, Cabot's and Least Terns; Puffins; Comorants; Guillemots; Egrets and other Herons; Grebes; Gallinules; Rails; Geese, and various forms of Ducks.

It is impossible to make anything like an accurate estimate of the number of many of these species, but it is probably conservative to say that from one to two million birds inhabited the protected areas during the past year.

EGRET PROTECTION

Members and other friends of the Association, to the number of 950, united the past year and contributed \$6,427.54 for the further protection of



SNOWY EGRETS, ORANGE LAKE, FLORIDA, ROOKERY

Photographed by Dr. H. R. Mills

the pitiful remnant of the great flocks of White Egrets once found in this country. The names of these contributors have been published from time to time in BIRD-LORE. With this sum we have not only conducted an extensive campaign of publicity on the horrors of the egret trade, but four agents were sent into the southern swamps during the spring and summer to locate such colonies of nesting birds as were yet to be found. Twenty-six breeding rook-

eries were located, nineteen of which were protected by our agents and hired wardens. While, for obvious reasons, it is deemed inadvisable to give publicity to the exact location of these colonies, it would probably not be localizing them too much to say that the most of them are in Florida, Georgia and South Carolina, and one each in the states of North Carolina, Texas and Oregon.



YOUNG CARACARA IN NEST, BIRD PROTECTED IN FLORIDA AUDUBON ROOKERY

Photographed by O. E. Baynard

These colonies, by careful count, contained about 1,400 of the small Snowy Egrets and 2,100 of the large Egrets. None of the colonies were raided by plume-hunters, the one attempt in this direction being frustrated by the warden in charge. The birds, therefore, enjoyed the peaceful occupation of their rookeries to an extent unknown in recent years. Many thousands of other birds, including some of the rarest species in America, also reared their young in safety in the protected areas.

In order to get a fair idea of the extent of some of these colonies, we may mention that in one Audubon Society reserve, in Florida, the agent in charge states that the past summer there nested there in security, the following (each number given refers to a nesting pair of birds): Wood Duck, 1; Glossy Ibis, 9; Least Bittern, 38; Ward's Heron, 1; Egret, 197; Snowy Egret, 254; Black-crowned Night Heron, 136; King Rail, 7; Purple Gallinule, 90; Florida Gallinule, 66; Black Vulture, 2; Green Heron, 270; Red-winged Blackbird, 300; Water-Turkey, 368. The above facts were gathered by actual count.

The following are estimates. Your Secretary, who visited the colony in the height of the season, regards them as conservative: Boat-tailed Grackle, 600 pairs; Louisiana Heron, 1,950 pairs; Little Blue Heron, 3,500 pairs, and White Ibis, 9,000 pairs. This makes a total of about 33,000 birds occupying this one protected area, and, I may add, they were guarded by the Association at a cost of \$350, or, at the rate of about one cent per bird.

In another Florida swamp, discovered by one of our agents early in the year and guarded successfully by wardens through the nesting season, the bird population was found to be as follows: Between five and six hundred Egrets; about 1,000 Wood Ibis; 25 Roseate Spoonbills; 40 Limpkins; 100 Ward's Herons, a number of pairs of Swallow-tailed Kites and Wood Ducks, as well as several thousand of the small Herons.

We have experienced a most successful and prosperous year in our endeavors to protect White Egrets. But for the efforts of the Association of recent years, these birds doubtless would today be on the very verge of extermination. If the sale of their feathers can be prohibited and the colonies guarded for a period of years, there appears to be no reason why they should not again become numerous, even as the Gulls and Terns have prospered under similar conditions.

LEGISLATION

The year 1912 saw comparatively few state legislatures in session. Our most active efforts were put forth in Massachusetts and Virginia. Something of the Titanic struggles between the friends and foes of wild life in these states will be found in the report of the field agents. The two big points, however, which shone out clear and distinct after the dust of battle had blown away, were these:

The sale of native wild game is no longer permitted by law in Massachusetts, and Virginia has inscribed on its statute books the statement that no longer may Robins be legally slaughtered within the boundaries of her commonwealth.

The subject of legislation looking to the federal protection of migratory birds was again before Congress the past year. Several representatives of the Association visited Washington in the interest of the three bills being considered, and your Secretary addressed the committees of the House and Senate having these bills in charge. At this time these measures are still pending.

MRS. RUSSELL SAGE FUND

The work in the southern states has for the second year had the support of a fund of \$5,000 given by Mrs. Russell Sage for the special object of arousing public interest in the future protection of Robins, which have long been regarded as game-birds in that territory. It was by means of this fund that

the legislative campaign was waged in Virginia, which resulted in the passage of the Robin Protection Bill. Other legislative efforts were also aided from this source.

The organization of Junior Audubon Classes in the schools, whereby each child paying a fee of ten cents receives an Audubon button, together with leaflets and pictures which cost us twenty cents to manufacture, was carried on in a manner which had given good results the previous year. In all, 10,004



SECTION OF RIVERSIDE, TENNESSEE, JUNIOR AUDUBON CLASS

children were enrolled in these classes during the school year. These are distributed through the fifteen southern states. Virginia, where we had the coöperation of the State Audubon Society, and the active field efforts of our agent, Miss Stuart, showed the best results, with a record of 131 classes and a membership of 2,560.

JUNIOR WORK IN THE NORTHERN SCHOOLS

At the last annual meeting, attention was called to the need for funds with which to push this important branch of our work among the children of the schools in the northern states. One of our deeply interested members who was present, shortly afterward secured the support of one of his friends for this work and sent a check for \$5,000 with which to put the plan in operation.

We were unable to get the necessary literature prepared before January, but from then until the close of the schools on July 1, the work was pushed. In our efforts we had the active assistance of the State Audubon Societies of Ohio, Pennsylvania, New Jersey, Rhode Island and Massachusetts.

Our report to that friend of the birds and the children who made these

efforts possible showed that success had attended our efforts in the North even better than we had secured in the South.

Nine hundred and sixty classes were formed with a total paid membership of 19,365. These were distributed through nineteen states, New Jersey leading with 411 classes and 8,912 members.

It is a great pleasure to report that so well pleased was our benefactor with the final results that he immediately forwarded a remittance for \$5,000 with which to continue the work this season, and at the same time stated that we might expect a like contribution next year.

Endorsement of Junior Audubon Work by Commissioner Hon. P. P. Claxton

Dept. of Interior, Bureau of Education, Washington, D. C.

I consider the work of the Junior Audubon Classes very important for both educational and economic results, and I congratulate you upon the opportunity of extending it. The bird clause in the Mosaic Law ends with the words: "That it may be well with thee, and that thou mayest prolong thy days." The principle still holds. I hope that through your efforts the American people may soon be better informed in regard to our wild birds and their value.

Yours very truly,

P. P. CLAXTON, *Commissioner.*

Washington, September 19, 1912.

WORK IN ALASKA

The rapidity with which the breeding-range of the wild Ducks and Geese in the Northwest is being destroyed by the draining of sloughs, ponds and lakes for agricultural purposes, is annually driving the wild fowl farther northward in summer. Ultimately, Alaska will be the last stand for many of these birds, which it is highly desirable should be spared for the pleasure and profit of mankind.

There is reason to believe, today, that a more or less wholesale business of taking eggs in Alaska for commercial purposes still exists. Indians in many parts of the territory kill numbers of birds for their feathers. As on the outskirts of civilization everywhere, there are to be found in Alaska large numbers of the white race who through thoughtlessness, or a lack of those finer sensibilities which more strongly characterize the older settled sections of our country, wantonly destroy many birds and their nests. These are some of the reasons why it has become tremendously important that the work of bird-study and bird-protection should be seriously inaugurated in Alaska.

In response to this demand, one of our liberal and far-seeing members, whose name I regret to say we have been requested to withhold for the present, has agreed to contribute \$5,000 during the coming year; \$1,000 of this amount has already been remitted.

During the past summer, Mr. G. Willett, an able ornithologist of Los

Angeles, California, went, as our representative, to serve as warden on the St. Lazaria Government Bird Reservation in southern Alaska. His report on his experiences there and his observations of the general situation in that section is so full of interest that we expect to publish a portion of it in connection with the general annual report.

One of the chief lines which we expect to inaugurate in this territory is a systematic plan of bird-study in the schools. In this we will have the hearty coöperation of the Board of Education of the United States Department of Interior. Four colored plates of Alaskan birds have already been prepared, and these, together with others, all of which will be accompanied by leaflets, will before many months be ready to place in the hands of every pupil in the schools of Alaska.

We have some other plans in contemplation in reference to this important field, announcement of which we are not yet in a position to make.

MISCELLANEOUS AND FINANCIAL

During the year, in addition to one circular issued for special legislative purposes, the Association has published the following seven Educational Leaflets, accompanied with colored plates and outline drawings: No. 53, The Horned Lark; No. 54, The White Egrets; No. 55, The Hairy and Downy Woodpecker; No. 56, The Ruby-throated Hummingbird; No. 57, The Yellow-headed Blackbird; No. 58, The California Quail; No. 59, The White-breasted and Red-breasted Nuthatches.

We have issued 943,600 Educational Leaflets; 694,300 colored pictures of birds, and 557,800 outline drawings of these pictures. This is an increase of about 100 per cent over the quantity of our publications last year.

All our members, subscribers and Junior secretaries have been supplied with BIRD-LORE in order that they may be kept fully posted concerning the activities of this Association, and, at the same time, possess the ornithological information and teaching material which that magazine contains.

The financial support of the Association has been encouraging. Twenty-six Life Members have been received, which now gives us a total of 136 Life Members who have paid \$100 each to the Endowment Fund of the Association.

The Sustaining Membership during the past twelve months has grown from 1,351 to 1,625.

The Contributors to the General Fund have increased in number from 73 to 168.

The income of the Association for the year 1911, from all sources, amounted to \$44,607.99. During the past year the total income has been \$59,757.71; thus showing an increase of \$15,149.72.

While the increase of the resources of the Association is gratifying, let no one be deceived for a moment in thinking that our means is in any sense ade-

quate to the worthy demands made upon us for assistance from all parts of the country.

Before closing, the Board would take this opportunity of calling to the attention of our members and friends the desirability of greatly extending the Endowment Fund of the Association. We trust this will come to the attention of many who when making their wills may feel that the great work of this Association merits the strong continued support which only a large endowment can provide.

T. GILBERT PEARSON, *Secretary*.



REPORTS OF FIELD AGENTS

REPORT OF EDWARD HOWE FORBUSH, FIELD AGENT
FOR NEW ENGLAND

Since the last annual meeting of this Association, your Field Agent for New England has had more than the usual demand for lectures, and has been obliged to refuse many opportunities because of other pressing work. Twenty lectures have been given, however, to about 4,000 people, mainly in Massachusetts, Connecticut, Vermont and New Hampshire.

The series of newspaper articles published in New England newspapers, which was interrupted for a time last year because of lack of means for their publication, has been continued intermittently during the present year. Some educational work has been done in the schools in coöperation with the State Societies.

Two legislatures in New England held sessions in 1912,—Massachusetts and Rhode Island,—and the fall session of the Vermont Legislature has just begun as this report is being written. The Audubon Society of Rhode Island did not initiate any new legislation, and apparently no attempt was made to improve the bird laws of that state. On the other hand, no bad legislation was enacted, and the session was rather uneventful so far as bird- and game-legislation was concerned. In Massachusetts, however, a fight was waged from the beginning of the session almost to its close. Early in the year two bills were passed opening the shooting season on October 12, instead of on the 15th as formerly. These bills passed in spite of strenuous and persistent opposition. As October 12 (Columbus Day) is now a legal holiday in Massachusetts, and as the season now opens on that day, it is easy to see what a slaughter takes place when every shop-worker and clerk who carries a gun is let loose the first day of the season to hunt birds which have become tame by reason of protection through the long close season.

These bills gave the "poor man" an opportunity to hunt on the holiday. No consideration was shown for the poor birds.

The passage of these bills warned the friends of the birds as to what they might expect of the legislature, and when a strong attempt was made to repeal the present law prohibiting spring-shooting, we were ready to meet it. Five bills were introduced to change the open season on certain wild fowl in order that the gunners along the shore might enjoy a longer season for shooting in the winter or spring. Two of these were very strongly advocated and might have passed had they not been strenuously opposed by this Association and the Massachusetts Audubon Society. One was finally killed in the House, another in the Senate, and the others were defeated in Committee.

The greatest fight made by the Association during the session was waged

for the passage of a bill to stop the sale of native wild game. This bill was passed, although its enemies tried to defeat it by every possible means. The fight was so long and severe that it taxed all the resources of the Association; but, in the end, it brought many friends to our assistance, among whom was Dr. Wm. T. Hornaday of New York, who had led a similar battle in that state in 1911. Mr. Wm. P. Wharton, one of our own members, made this cause his own and supported it in every legitimate way. The committee on the protection of birds appointed by the Massachusetts Grange Patrons of Husbandry worked without ceasing for the bill. Practically all the fish- and game-protective associations of the state were with us. The strongest opposition came from certain market interests and from the representatives of market-hunters, particularly those from the South. The law, as now on the statute books, goes into effect January 1, 1913, and an attempt to repeal it may be expected at the next session of the Legislature.

Late in the session, Governor Foss recommended an appropriation of \$50,000 for the protection and propagation of birds, believing that, on account of the destructiveness of insect pests and the millions of dollars that have been expended to check them, an attempt should be made to foster and encourage insect-eating birds. The Governor's message was reported on favorably by the Committee on Agriculture, but the bill was killed without a hearing by the Committee on Ways and Means.

A bill which was introduced to prohibit the use or sale of automatic or pump-guns was forestalled and defeated by the passage of bills to limit the number of birds and squirrels to be taken in a day by each hunter. It was argued that the kind of a gun used was immaterial provided that only a few birds could be killed legally in a day. A bill allowing cities or towns to petition the Fish and Game Commission for the appointment of a game-warden was passed. Many bills of minor importance were defeated, and, on the whole, the season's work represents a distinct advance in protective legislation.

In July, your agent, through the kindness of Mr. William P. Wharton, was enabled to visit many of the protected bird colonies off the coast of Maine, which were found to be in a flourishing condition.

Encouraging reports have been received from the bird colonies on the Massachusetts coast. The Least Terns of Martha's Vineyard, which have been near extinction, appear to have more than doubled their number within the past two years. The Heath Hens, on the same island, which have been protected for several years by a warden appointed by the commissioners on fisheries and game, were very near extinction a few years ago, and last year they were not making encouraging progress; but this year they have increased considerably and may yet be re-introduced to their former range.

During the summer your agent coöperated with the efforts being made by the central office of the National Association to raise a fund for the further protection of Egrets.

In September a trip to South Carolina was undertaken for two purposes:

First, to examine and investigate the killing of small birds there for food; and second, to see what could be done there for the better protection of birds and game. It had been generally understood that the Bobolinks, or Rice-birds as they are called in South Carolina, did great harm to the rice crop and were killed to save the crop. A thorough investigation gave incontestable proof that the damage these birds do to the rice crop now is negligible, as the rice industry in the South Atlantic States is almost a thing of the past, and that the birds are not killed to protect the crop, but for the profit resulting from their sale. Planters assured me that comparatively few birds were ever shot to protect the crop, as powder was the chief ammunition used for that purpose and very little shot; the birds are killed for the profit obtained by hunters and marketmen, and this has always been the chief incentive for the slaughter of many hundreds of thousands of birds annually. Today most of the negroes have guns, and shoot anything they can sell or eat. Even small colored boys are armed with air-guns which they use for killing small birds of all kinds. There is no resident hunters' license law, no appropriation for the enforcement of the game laws, and therefore little enforcement of such bird and game laws as South Carolina has, and Mr. James Henry Rice, Jr., who is the chief warden and the State Agent of the National Association of Audubon Societies, has no income for the work, other than the limited amount which the Association is able to provide.

Returning to New England, your agent has since applied himself to the task of raising money to assist in carrying on the work of education and law enforcement to protect insect-eating birds from the incessant persecution which they now undergo. While it is discouraging that people of large means will not give largely in support of this work, there is great encouragement in the fact that many in moderate circumstances are far more generous in proportion to their means. If we continue and enlarge our educational work, the time will come when great popular subscriptions will ensure success.

REPORT OF KATHERINE H. STUART, FIELD AGENT FOR VIRGINIA

The second year of the educational work of the Audubon Society in Virginia, made possible by the assistance of Mrs. Russell Sage, has been marked by steady growth of interest in the better protection of our wild life.

The month of September, 1911, was given by your agent to preparation for the various departments of work to be carried out in the schools and by the Virginia Federation of Women's Clubs. In October, we conducted most successful Audubon exhibits at the county fairs in Fredericksburg and Bedford City. Attractive booths, decorated with autumn leaves, grain, pumpkins, apples, mounted specimens of useful birds, with their nests

and eggs; a bird's Christmas tree, hung with suet, nuts and cracked bones, fruit, etc.; a sample feeding-table; a fine collection of insects injurious to agriculture, with bird charts, and the beautiful National Leaflets, all tended to give great popularity to the exhibit.

Mrs. William Yancey, Chairman of Bird Department, Bedford County, for Virginia Federation of Women's Clubs, had charge of the exhibit at Bedford City. Her charm of manner and earnest work has accomplished much good in that section. Through her efforts many prizes were offered and awarded to the children of the schools for the best essay on our native birds, for the most attractive bird-box, and for the best drawing of a bird from life. Mrs. Yancey also obtained one hundred signatures from the farmers of Bedford County for our proposed Robin Bill.

I had charge of the exhibit in Fredericksburg, where Capt. Dan. M. Lee, brother of our national hero, Gen. Fitzhugh Lee, gave me one of the best positions in the Agriculture Building, and detailed his own servant to secure me all trees, leaves, etc., needed for decoration. Hundreds of people visited the booth from the lower counties, and seemed much interested in our work. One of our visitors, to whose earnest work in the legislature we owe much, was the Hon. R. C. L. Moncure, and it was here he pledged us his aid for our forthcoming legislative bills. Capt. E. P. Rowe, a prominent citizen of Fredericksburg, and a veteran of two wars, gave our cause great assistance by presenting many farmers to me, who thus heard our plea for the conservation of our beautiful insectivorous birds and also our splendid game-birds. Captain Rowe secured the signatures of hundreds of voters in Stafford County for our proposed Robin Bill, and thus was launched at these Audubon exhibits our bill to save the Robin from destruction.

Later on, my time was fully occupied visiting the schools and teachers' conferences where I spoke to hundreds of children and several thousand teachers, superintendents and principals on Junior Audubon Classes, the non-enforcement of our game laws, and the importance of a State Game Commissioner. I formulated a petition for the protection of the Robin and had it approved. The work of printing and getting all in readiness was soon accomplished, and the petitions reached my office from New York the week before Christmas. The bill was framed for us by Judge J. J. M. Norton, President of the Alexandria Audubon Society, and carried with it a fine of from five to fifty dollars and a forfeiture of the gun to the state for violation of the law. I sent the Children's Robin Petition and a copy of the bill to each of our senators and representatives in Congress, to every superintendent and principal of our public schools, to the presidents of our colleges; not one was omitted. The teachers had charge of this work and took the greatest pride in securing the signatures of the children of the various classes. The labor of sending out these petitions was very great and occupied my time for two weeks, for, as our Assembly opened January 12, it was important to get the bill on the cal-

endar at once and passed, if possible, by January 10, General Lee's birthday, as a tribute to him and to his love and tenderness to the lower orders of life, as exemplified in his devotion to his world-famous war horse, 'Traveller.'

I had written to the Hon. A. M. Bowman, asking him to be the patron of the bill, and he accepted at once and did faithful work to the end. Our bill and petition were carried to Richmond by the Hon. C. C. Carlin, of Alexandria, Representative in Congress of the 8th District, and put in the hands of the Hon. R. C. L. Moncure and Hon. A. M. Bowman. It was soon on the House Calendar, and it passed that body, in its original form, with a splendid vote; but it was most difficult to get it before the Senate, where the real fight was to occur. Just here we owe much to the influence of the Hon. C. C. Carlin, Judge L. C. Barley, and Judge J. K. M. Norton, framer of the bill, whose presence in Richmond and influence saved the day. On February 29 the bill passed and was soon signed by our Governor. During the session of the Assembly I spent some weeks in the city of Richmond, working in the interest of our bill for a State Game Commissioner and the Children's Robin Bill. We deeply regret the failure of the bill for a State Game Commissioner, but we hope for a better result in 1914.

When not occupied with legislative work, I visited the twenty-four schools of Richmond, with fourteen thousand pupils, speaking all day in the interest of Junior Audubon Classes and getting the Robin petition signed by the children. I secured about ten thousand signatures, and we gained about thirty Junior Classes through the six weeks of hard work.

I also visited the schools at Ginter Park, Swansboro and other places near Richmond, several of the large private schools in Richmond, and gave a talk before the Humane Association.

Notwithstanding the time given to legislative work, its difficulties and many trials, we rejoice to learn from the National Secretary's Report that Virginia stands first among the southern states in Junior Audubon Classes and also in junior membership.

There is much to report of work done if we had the space,—of hundreds of letters written and received from all parts of the state, some from outside states, others from foreign countries (Turkey, Italy and England), asking questions and displaying interest in the Virginia Audubon work; of letters to and talks with the game-wardens of the state; many lantern-slide lectures; talks during summer normal school sessions to about four thousand teachers and educators from thirty-four states and three foreign countries; of local work in and about the city of Alexandria, etc.

Our Junior Classes have steadily increased in number and varied activities, such as establishing feeding-grounds, and caring for the birds during the last terrible winter. Hundreds of boxes have been made and put up by the boys and girls, and by many prominent gentlemen of our state. Bird's Christmas trees have been quite numerous, and many of the children took the Christ-

mas census. A most interesting bird-box contest took place in Danville, under Mr. Perkinson, who offered prizes of from one to five dollars to the boys and girls of the public schools for the most attractive bird-box. Fifty pupils took part in the contest. Mr. Perkinson is one of the most influential men in the city of Danville. We regret that we have not a picture of this interesting sight. The whole city was invited to witness it at a public hall, and the evening closed with a stereopticon lecture. The gold medal offered by the Virginia Audubon Society for the best composition on our Virginia birds was won by Jesse L. Chrisman, of Staunton, Virginia, and has given great impetus and interest to the Junior Audubon work in the state. The children of the Junior Classes have written many letters on birds, and received prizes offered by the Times-Dispatch of Richmond. The Robin Petition has done more to arouse interest in bird-protection than any other force yet tried. The fact that it was a state-wide issue gave the Virginia Audubon Society great prominence and more strength for its future work.

The Virginia Federation of Women's Clubs has worked earnestly in every direction, especially in getting the passage of the Robin Bill, and letters and talks to their respective senators and representatives, urging a State Game Commissioner. Their coöperation and enthusiasm in this work has been a tower of strength to me as their chairman, which position I have held for six years, and to which I have been unanimously called by this splendid body for the coming year.

REPORT OF JAMES HENRY RICE, JR., FIELD AGENT FOR SOUTH CAROLINA

The work of the year, or such part of it as included active operations, has been devoted almost exclusively to exploration and protection. What intervals there were have been spent in lecturing, particularly during January, February and March.

Throughout the year, a series of short articles on the life histories of birds of the region, with especial reference to their economy, have been published in the leading daily and weekly papers of South Carolina, and many in Georgia. At present a somewhat more comprehensive series has been begun in 'Uncle Remus' Home Magazine,' published at Atlanta, Ga., and widely circulated from Maryland to western Texas. Another series is appearing in 'Southern Farming,' an agricultural journal with a large circulation among southern farmers.

The territory embraced in my exploration for rookeries of Egrets extends from the southern North Carolina line to Jacksonville, Florida. The attempt to penetrate and explore Okefenoke Swamp failed for the reason that the guides refused to remain inside, owing to heat and attacks of insects. I was forced to give it up, comforted somewhat by the reflection that if a halfbreed

Indian, a white Cracker, and a negro could not endure the swamp, neither could plume-hunters.

Georgetown, South Carolina, and Savannah, Georgia, are respectively headquarters for financing plume-hunters. A notorious illicit whiskey-dealer, or 'blind tiger,' named Palmer, in Georgetown, sends out the plumers. I have not been able to get anything definite as to Savannah dealers, beyond rumors, but these are singularly persistent.

Early this year, Arthur Lambert, formerly fined three times for shooting up a rookery on the preserve of the Santee Gun Club, near McClellanville, was indicted before the United States District Court at Spartanburg, charged with trespass and violating a court order. He was convicted and sentenced to eight months in jail. This kept him out of mischief until the plume season was over.

Jim Mitchum, who has figured in a half-dozen encounters with wardens, together with two confederates, Jake Jordan and a negro, were in jail, awaiting trial on a charge of assault and battery with intent to kill. Late in spring they secured bond, but not until the Herons had left the rookeries. They have not yet been tried, owing to the work of a shrewd lawyer.

In Savannah, Georgia, the leading plume-hunter was Ward Allen, who had been indicted in the Georgia courts and heavily fined, most of the fine being suspended during good behavior. So Allen could not stir, and in fact was conspicuously present in Savannah during the entire spring and summer. There are several charges against him in South Carolina, and he is apparently afraid to cross the Savannah River.

These men represent the principal destroyers of Herons between North Carolina and Florida.

This being the situation, I concluded that the Association could save the hire of wardens for certain colonies located late in the season; and the result has justified my belief. Watch was kept on each one of them; and conditional arrangements were made at a number of rookeries. With the exception of one bird, a Snowy Egret, killed on James Island, there were no birds shot at the various rookeries, all of which were visited repeatedly by citizens well known to me, who lived near-by, and also by myself.

The only Herons known to have been killed, aside from the one mentioned, were shot by roving negroes for food. Two of these men were caught and fined in Colleton County, and recently, two in Charleston County.

Annual meetings of the various agricultural societies, held along the South Carolina and Georgia coasts, were attended by your agent and talks made to planters, who are, to a man, enlisted in the cause of saving Herons. Boatmen and fishermen are, as a rule, likewise enlisted in the same cause and render aid by furnishing information as to rookeries and violations of law.

Several years ago, through the efforts of the National Association of Audubon Societies, the light-keepers along the coast were made game-wardens

by special executive order, and these men are a tower of strength to the cause.

It was surprising, as well as gratifying, to find so many Snowy Egrets in unexpected places. This matter was covered in a special letter to Secretary T. Gilbert Pearson, who considers it advisable not to make the details public at this time, as it would be unwise to advertise the exact location of our breeding colonies.

From Charleston to McClellanville on the north, and from Charleston to Savannah, Ga., on the south, there are networks of island and bewildering mazes of marsh, skirted by forests inland, through which rivers and creeks penetrate in their seaward course. Again, from Savannah to St. Mary's on the Florida line, a somewhat similar condition exists.

To traverse this region during the breeding season of the Herons requires nerve and endurance, for in most of it accommodation of any kind is not to be had within a reasonable distance of the day's work. My intimate knowledge of the shore line of both states has aided me, and acquaintance of long standing with the country people has helped me more.

Under the most favorable conditions there is far too much territory to be covered within the time assigned. Work ought to begin by March 1, at the latest, and should be actively prosecuted until August, in order that anything approaching thoroughness may be done to locate the rookeries.

Two points stand out clearly:

First, That Snowy Egrets and American Egrets are increasing rapidly, and are establishing their rookeries farther inland. Snowy Egrets were found in Barnwell County, a hundred miles from the sea. American Egrets were found on the Wateree River, about one hundred and thirty miles from the sea.

Second, That their protection requires two things, namely, active warden service during the breeding season, and continued educational work among the citizens of the regions they inhabit.

The ground gained will be lost another year unless there is determined work from the outset. The South Carolina plume-hunters will be free another season, and these men have unusual facilities for learning the location of rookeries, many of which are already known to them. By beginning work in the neighborhood of the Okefenoke Swamp early in April, the worst of the insect season may be avoided. The action of Georgia in voting a hunter's license and creating a warden system has been salutary, and is of immense help. All the Georgia wardens with whom I have come in contact are enthusiastic, reliable and determined.

Political conditions in South Carolina have been, and still are, regrettable; but there has been no attempt to take away protection from non-game birds, and the sentiment of the people is overwhelmingly in favor of more rigid protection.

There has been a great wave of insect life over both Georgia and South

Carolina. Many of the weekly papers have contained articles from farmers, demanding better protection to insect-eating birds. This has been called forth by a crop-destruction without parallel in the two states. The hay crop and the late corn crop are both total failures, due to an invasion of *Laphygma frugiperda*. A mite known locally as "the red spider" has devastated thousands of acres of cotton. The pine bark beetle (*Dendroctonus frontalis*) has destroyed the greater part of the pines west of Columbia and is still at work.

These, among other things, have thoroughly aroused the farmers of South Carolina; and Georgia is attacked by all these pests, with also an invasion or outbreak of the mole cricket (*Gryllotalpa borealis*), which has proved disastrous to grain and to early corn.

In a normal condition of the public mind, action would be instant. Even as it is, the governor of South Carolina, bitterly hostile during the past winter (he vetoed the appropriation for the chief game-warden on the ground that the work was "interference with the God-given rights of the people") has announced several times on the stump that he favored the protection of birds.

Much has been said and written; much is still being said and written on the subject of staving off the evil to come by prompt and drastic bird-protection; but what had been done has been the saving so far of the Egret rookeries, inasmuch that the birds have multiplied, and along with that work had been the constant spreading abroad of knowledge of birds.

I have been severely handicapped by the governor's veto last winter, but this never led to even a moment's consideration of letting up. The assistance extended by the National Association of Audubon Societies kept the work alive in South Carolina.

The South is white for harvest. My experience is that people are more than willing to hear the gospel of bird-protection preached. Ignorance is widespread still, however. The chancellor of one of the leading southern universities (not in South Carolina) asked me last year if the Association took its name from Audubon *because he (Audubon) had left money to it!* He expressed himself willing to know something of Audubon.

With constant educational work, done consistently throughout the year, the South would liberally contribute to the work of the Association. But the work must be done thoroughly and patiently.

I trust these observations may not be considered irrelevant. They are given with utmost seriousness on a grave case. A fight will be carried right up to the South Carolina General Assembly and through it. Letters and newspaper articles are going out every day now. Many lectures will be given, and, if possible, I shall address the coming General Assembly—a newly elected one.

A bill providing a resident hunters' license passed the Senate last session by a vote of 28 to 8, and this bill comes up for consideration in the lower House

at the next session. Its chances of passage are good, and it does not appear that the governor would refuse to sign it.

But the program is fight; if whipped, fight again; and keep on fighting until the end is gained.

REPORT OF EXPEDITION INTO OKEFENOKE SWAMP, GEORGIA

By FRANCIS HARPER

Okefenoke Swamp, in southeastern Georgia, lies about forty miles from the coast, and extends slightly over the state boundary into Florida. It is approximately forty miles in length by thirty in width, and occupies an area of some seven hundred square miles. This large and wonderfully interesting territory has been described recently as "one of the least-known areas of its size in the eastern United States." It has always been hedged about with more or less of superstition and mystery, and, until within the last few years, was virtually a *terra incognita* to the scientific world. Many an ornithologist, while en route to some more southerly Mecca, has doubtless passed almost within sight of its borders without turning aside to explore the enchanting Okefenoke wilderness. Only the scantiest reference to the swamp exists in the literature of ornithology, and exceedingly little definite information concerning its bird-life has been available.

For the purpose of making an ornithological reconnaissance of the swamp, and, if possible, to locate breeding colonies of Egrets for the National Association of Audubon Societies, I entered the Okefenoke on May 6, 1912, remaining for two and a half weeks, till the 23d. During that time I was enabled to see much of the islands, 'bays,' prairies, and waterways in the heart of the swamp.

The larger islands—such as Billy's, which is perhaps ten square miles in area—are covered chiefly with a fine growth of long-leaf and slash pines, saw-palmettos and huckleberries, and form a congenial habitat for such species as the Sandhill Crane, Bob-white, Red-cockaded, Pileated, and Red-bellied Woodpeckers, Southern Meadowlark, Pine-woods Sparrow, White-eyed Towhee, Pine Warbler, Brown-headed Nuthatch, and Bluebird. Some of the smaller islands support a luxuriant 'hammock' growth of spruce pine, live oak, several kinds of bays, sweet gum, gallberry, cane, etc.

A large proportion of the swamp consists of dense cypress 'bays,' where some of the finest cypress timber in the world grows in several feet of water. In such places there is a tangled undergrowth of bushes, shrubs, and ferns, well-nigh impassable, except by a few narrow water-trails or 'runs,' where the traveler pushes his tiny boat in a tortuous and wearisome course between cypress knees, over floating or submerged logs, and under fallen trees. Here, beneath the shady canopy of moss-garlanded cypresses, abound such birds



A GEORGIA FAMILY WHICH DESTROYS MANY BIRDS AND ANIMALS

The fawn had just been killed by the dogs in the foreground

Photographed by Francis Harper

as the Florida Red-shouldered Hawk, Florida Barred Owl, Yellow-billed Cuckoo, Pileated Woodpecker, Crested Flycatcher, Acadian Flycatcher, Cardinal, White-eyed Vireo, Prothonotary Warbler, Swainson's Warbler, Parula Warbler, and Carolina Wren.

It was on the prairies, however, that I entertained hopes of finding some of the rarest and most interesting of the wading birds. These prairies vary greatly in extent,—from ten or fifteen square miles to only an acre or two,—and are scattered throughout the swamp. Among the largest are Chase Prairie and Floyd's Island Prairie, both of which I carefully reconnoitered. Heavy spring rains in 1912 had caused an extraordinary depth of water in all parts of the Okefenoke, and in May the prairies were practically lakes, the deeper parts grown with such plants as the white and yellow water-lilies, and the shallower places with maiden cane, saw-grass, and pickerel weed. I was informed by inhabitants of the swamp, some of whom possess a surprising knowledge of its bird, animal, and plant life, and also by surveyors and lumbermen, that considerable numbers of wading birds, including Egrets and Ibises, were found there regularly, and nested in the small clumps of cypresses, known locally as 'heads' or 'houses,' that dot the prairies. And there is every reason for believing that in ordinary dry seasons these remote and seldom-visited prairies, with their vast numbers of frogs and fishes, should form a splendid feeding-ground for nesting Herons. At the time of my visit, however, the exceptionally high water had apparently driven most of the waders to nesting-places outside of the Okefenoke. For instance, on the whole wide expanse of Chase Prairie, I found, of wading birds, only Ward's Heron, the Green Heron, and the Sandhill Crane—and not a dozen of these all told.

Among the important waterways are the following, all connected with each other by more or less navigable 'runs:' the 'Big Water' and Minne's Lake, comparatively deep and open parts of the same long, narrow stream in the northern part of the swamp; Billy's Lake, some three miles long and fifty yards wide, through which most of the water of the swamp flows into the far-famed Suwannee River on the southwest; and the logging-canal, dredged for eleven or twelve miles through the eastern part of the swamp in the '90's, but now abandoned. The St. Mary's River also flows out on the southeast.

Of water-birds I observed the ten following species in the swamp: Water-Turkey, Wood Duck, White Ibis, Wood Ibis, Ward's Heron, Little Blue Heron, Green Heron, Sandhill Crane, Limpkin, and Spotted Sandpiper.

The Water-Turkeys, of which I saw twenty-five or thirty individuals, are congregated chiefly along the 'Big Water.' Several nests were located in a cypress 'head' on Floyd's Island Prairie.

The Wood Ducks are also most numerous on the 'Big Water,' though numbers of them may be found on all the other waterways.

Eight or nine White Ibises were observed in the northern part of the swamp. This is one of the species which were reported as common in other years.

A single Wood Ibis was seen flying over Billy's Island. The 'Flinthead' is well known to the swamp inhabitants, who prize it as a game bird. It is said to frequent the numerous small cypress ponds that are contained within the larger islands.

Small numbers of Ward's Herons are distributed generally throughout the swamp.

A few Little Blue Herons were seen in the northern part of the swamp. Just as I was departing, I learned of a colony, consisting probably of several hundred birds, that nested annually in Cowhouse Bay.

A small number of Green Herons were observed in suitable localities.

I saw ten Sandhill Cranes in the Okefenoke and heard several others. In May most of them were observed in the pine woods on the islands, where they were probably feeding on the vast beds of huckleberries. Unfortunately, this splendid bird also is eagerly sought for eating purposes at all seasons.

One or two Limpkins were noted on Honey Island Prairie, and half a dozen Spotted Sandpipers at Billy's Lake.

Another bird deserving particular mention is the Ivory-billed Woodpecker. I received definite information from those who are unquestionably familiar with this magnificent bird, concerning three different nesting-sites on a certain group of small islands. I made a special effort to reach the place, but the dimness of the trail and the thickness of the swamp proved too much for the guide and myself on the only day that we could devote to the purpose. There is no doubt that the Ivory-bill still exists, though in very small numbers, in the Okefenoke. The scarcely less gorgeous Pileated Woodpecker abounds in most gratifying numbers.

Though I found no Egrets within the Okefenoke, I learned of a populous heronry a few miles outside of the swamp, near the Suwannee River, where Egrets had formerly bred and were likely to be still found. I therefore engaged a man to investigate the colony. From his report it appears that on May 20, the colony contained between four hundred and five hundred nests with eggs or young; of these the great majority evidently belonged to Little Blue Herons, but about eleven American Egrets were observed among the adult birds flying overhead, and three or four nests that seemed to belong to the latter species were located. Several Ward's Herons were also observed in the colony. There was no evidence that the birds were being disturbed in any way.

I am indebted to Dr. A. H. Wright, of the Cornell University party which was investigating biological conditions in the swamp from May 28 to July 15, for still more definite information concerning this heronry. Doctor Wright visited the colony on June 18, when there were still a few eggs and young in the nests, and between eight hundred and one thousand young Little Blue Herons on the wing. He also observed there three or four American Egrets, and several Water Turkeys, Wood Ibises, and Ward's Herons. There was no trace of

any enemy of the birds—not even a Fish Crow, that scourge of southern heronries.

In early July, other members of the Cornell party saw four American Egrets at Billy's Island, and several Yellow-crowned Night Herons at Billy's Lake.

I learned from various sources that plume-hunting was formerly carried on in Okefenoke Swamp and thereabouts, but during the past few years, since the enactment of the state law protecting the Egrets, it had become so difficult to dispose of the feathers that the birds were very little molested. I was told that occasionally a hunter evaded the law by shipping a few aigrettes to market in the double bottom of a barrel of alligator skins. A rumor was also being spread at the time of my visit, to the effect that the feather-dealers were now offering \$1.50 for the plumes of small Blue Herons (probably *Florida caerulea*). This rumor excited some interest among the alligator hunters, who seemed to be under the erroneous impression that the law left Herons, other than Egrets, without protection. Furthermore, it is a lamentable, though not surprising, fact that here, as in most other remote regions, game laws are accorded the scantiest sort of respect.

Okefenoke, as one of the great natural features of the eastern United States, with no exact counterpart anywhere in the world, and as a refuge for rare and interesting forms of animal life, should be saved for the admiration and enjoyment of posterity. Its exquisitely beautiful cypress bays, vast bonnet-strewn prairies, luxuriant hammocks, and magnificent pine lands—all in their pristine glory—are infinitely more valuable to lovers of nature than are many millions of feet of lumber. Moreover, from a scientific, as well as from an esthetic point of view, the swamp is surpassingly rich. Here, over a vast area, are primeval conditions such as delight the heart of the ecologist, and such as are vanishing in our country at a most alarming rate. The loss to science, therefore, in the destruction of Okefenoke would be incalculable and irreparable.

During the past several years an ever-widening gash has been cut in the stand of cypress on the northwestern side of the swamp, to feed one of the largest lumber-mills in the South. The cypress is not expected to replace itself to any extent, and at the contemplated rate of destruction the next generation will never look upon the real Okefenoke. Another source of danger lies in the present craze for draining and 'reclaiming' swamp lands that never can be made suitable for agricultural purposes except at altogether prohibitive expense.

The establishment of a state or national preserve would be the ideal means for saving Okefenoke. It has also been demonstrated in South Carolina and elsewhere that a well-conducted gun club is one of the best agencies—paradoxical as it may seem—for conserving the fauna of a given region; for not only are the game-birds and animals carefully guarded from decrease, but

the non-game species are likely to be entirely protected from human molestation. And one of the most striking features of the swamp is the remarkable abundance and variety of its game—fish of many kinds, alligators, Ducks, Woodcock, Snipe, Bob-whites, Wild Turkeys, opossums, rabbits, squirrels, deer, raccoons, bears, otters, wildcats, and an occasional panther. Surely some means should be found for preserving the splendid fauna and flora of Okefenoke Swamp.

REPORT OF DR. EUGENE SWOPE, FIELD AGENT FOR OHIO

The educational side of the Audubon work in Ohio has greater need of attention than any of the other features. For that reason I have, as directed, devoted myself the past year almost wholly to the Junior Audubon Class work.

The laws of Ohio for the protection of wild life are probably as comprehensive as those of most of the other states, but the need for more wardens who will enforce them is apparent. There were, however, more prosecutions and fines paid for unlawful killing of birds last spring and summer than in former years, partly because of renewed interest of the Game Commission; also, because new Junior Audubon members reported many violations that otherwise never would have been known.

My experience thus far in introducing bird-study in the Ohio schools has been interesting, and, I believe, unique. In the first place, it must be remembered that Ohio is a new field, and I inexperienced at this work; and in the second place, I was unable to get the assistance I naturally expected. 'Bird Men' at different points of the state did not coöperate in this feature of the Audubon work. They were "too busy this year," but it must be said to the credit of several that they often lectured and wrote in behalf of bird-protection and bird-study, and thereby helped increase public interest in birds.

In inaugurating the Junior Audubon work in Ohio, my first step was to send an announcement leaflet, a Robin leaflet, and a personal letter to each superintendent of schools in the state. The same were also sent to a few teachers whose names I happened to have. Not one superintendent replied; three teachers did, however, and classes were started. A second personal letter to all the superintendents with specimen leaflets, caused two to ask for more information. My next experiment was to send a full set of ten leaflets to half the superintendents in Hamilton County. With each set went a personal letter, and an envelope addressed and stamped for the return of the leaflets "if they had no interest in the work" as stated in the letter. One set of the leaflets was returned, none of the others were heard from. By this time I well knew that if Junior Audubon Classes were to be formed in Ohio schools that it meant an aggressive personal presentation of the matter; so I sent out

a few letters asking for appointments with superintendents. No replies came. My next move was to appear before a superintendent unannounced and present the matter with as much earnestness as if I had been a commercial traveler selling goods. Of the first ten superintendents I called upon, four could see nothing to be gained in bird-study by the children, and frankly told me so. One became enthusiastic and invited me to talk before his teachers, and later to the children. The other five referred me to their "nature-study" teachers, with the consent that these teachers might try a class if they saw fit to do so. They did, and it didn't take either one a minute to decide and say so. Each regarded the Audubon leaflets as an especially good opportunity for the children, and classes were formed forthwith.

This gave me the key to open the way for bird-study in Ohio schools. These nature-study teachers, usually young women, had made a specialty of biology in their preparation for teaching, and were therefore capable of understanding the great advantage of bird-study for the children, and especially by the use of these splendid Audubon leaflets. Whenever one of these nature-study teachers formed a Junior Audubon Class in a school, and distributed the leaflets and badges, bird-study became highly contagious.

Personal letters and a few specimen leaflets were sent to the nature-study teachers at different points of the state, which started the work nicely, and Junior Classes began to be formed in gratifying numbers, and there were more requests that I come and talk before schools, clubs, classes and churches, than I could possibly think of undertaking.

One superintendent to whom I presented the plan of bird-study for the children dramatically threw up his hands and exclaimed "Well! What next? We are expected to teach the children everything from manners to sex hygiene, everything from how to stand on their heads in the gymnasium to how to brush their teeth at home, and now here is a scheme for forming bird classes. Pray, when will we teach school?" It is best to omit my reply. He said what other superintendents thought and would have said, if they could have said it as well on the spur of the moment.

Requests for information for forming Junior Classes were daily coming into the office, however, and classes were being formed in ever-increasing numbers, when thoughts of vacation and the work of closing school put on the the brakes and brought the work to a standstill.

A new opportunity now arose for getting our work widely presented. Our State Commissioner of Schools, Mr. Frank W. Miller, who had been friendly toward the work from the first, invited me to meet with the Supervisors of Agriculture at the Teachers' Annual Convention held at Cedar Point, the last of June. I gladly made use of the opportunity and met the Commissioner and supervisors. These up-to-date men were quick to see the advantage of bird-study in combination with elementary agriculture, and were heartily in sympathy with the use of the Audubon leaflets. In a short time it was

arranged that the Commissioner and the supervisors, one of whom would be present at each county teachers' institute, would advise bird-study at every institute held in the state. The value of this can be readily seen.

Considerable correspondence was necessary, with secretaries of county teachers' institutes, in order to insure attention and safe delivery of packages of announcement leaflets and other sample leaflets that I sent in their care to the supervisors at the various points for distribution. This called for over one hundred packages and a heavy toll upon my supplies, but was not, as I have since been informed, one-fourth as much material as the supervisors could have used to advantage. Whatever future course may be followed, and whatever progress may be made in bird-study in Ohio Schools, much credit is due Commissioner Miller and the present Supervisors of Agriculture. At the close of the county institutes, one of the supervisors who wrote me said, in part: "We worked hard, and boosted for the birds. Depend upon us for coöperation in any other plans you may have to introduce bird-study."

As proof of efficiency of the work done in July and August, I have to offer the fact that Junior Audubon Classes were formed and orders sent in for leaflets during the opening week of school in September, and since then the orders have been steadily coming in, and there has been an extensive call for information and sample leaflets. This is putting bird-study into town, village and country schools at a gratifying rate. Our cities, however, are slow to accept the work. City superintendents, I gather, regard bird-study as a kind of popular fad, instead of present and vital knowledge that *all* children now need. Several senior educators have said to me in substance: "Bird-study is all very well for country children, perhaps, but nothing more than an amusing distraction for the children of our city schools."

During the nine months that I have served as your Field Agent, there have been 1,130 personal letters written; 900 small packages of announcement and sample leaflets mailed out; 156 Junior Audubon Classes formed, with a total membership of 3,495; 50,000 leaflets have been folded, assembled and made into sets for convenient handling. I have given thirty "bird talks" before approximately 7,000 hearers. These talks were from twenty-five to forty-five minutes in length, and illustrated with from forty to ninety lantern-slides. The talks were always arranged for by appointment and considered more than mere entertainment, with the result that from one to twelve Junior Classes were formed wherever I gave a talk. There were numbers of other instances when I talked "birds" for five or ten minutes in school-rooms, before clubs and classes; of these I kept no record.

I have been able to get a few newspaper notices and short articles published in the interest of bird-study, and to have attention, through the newspapers, called to the necessity of feeding the wild birds during the trying times of winter. I also contributed twenty pages of bird-study material to the Ohio

Arbor Day Manual, and have published considerable material in the interest of birds in my magazine, "Nature and Culture."

Besides the little attention that is annually given to birds on Arbor Day in Ohio, many teachers who are not yet converted to the use of the Audubon leaflets give their classes some sort of instruction about birds two or three times a month. These teachers hesitate to use the leaflets because they still hold the idea that such a plan would be equal to an extra study. Gradually this mistake will be corrected, for every teacher who uses the leaflets converts some one or more of her co-workers, in time, to their use.

Whenever a superintendent or principal becomes truly interested, it results in an introduction of bird-study in the entire school; and such teachers as are indifferent or opposed to the work soon become interested.

The work in Ohio is now nicely started, and is not confined to any one locality, for societies are formed at points all over the state. The work can now go on without much wasted effort on the part of your Field Agent. With some special work in addition to influences now active, bird-study could be introduced in fifty per cent of the schools of the state within the next eighteen months.

REPORT OF JEFFERSON BUTLER, FIELD AGENT FOR MICHIGAN

The first work of your Field Agent was to investigate reports that came in last winter, as they had in former winters, that wild Ducks were shot at the air-holes in the ice in Lake Erie, the Detroit River, Lake St. Clair and the St. Clair River, and disposed of to hotels and road-houses along the Detroit River. These road-houses make a specialty of providing game out of season. Our game-wardens evidently have been unable to cope with the situation. A number of these road-houses are along the Canadian shore, and it has not been possible to get the Canadian officials to interfere, because they claim that such game sold in Canada out of season comes from the American side, so the Canadian law is not broken.

After studying the situation, I decided to organize those who would give effective aid. Some of these men who engage in pot-hunting are well-to-do, with good reputations, who own their own homes in Detroit. On this account I found it impossible to get those interested in acting with me to permit of any publicity in the matter because these pot-hunters are their old-time friends. A plan is being framed whereby we expect to be able, with the coöperation of the Canadian authorities, to abolish this shooting.

During the winter, five schools in Detroit and seventeen in other parts of the state were aided in feeding the winter birds and making shelters. During the year, I have given sixty-seven lectures to schools, churches, clubs, fraternal societies and sportsmen's organizations. I occupied the pulpit in churches

of nine denominations, and spoke on Audubon and humane work at both morning and evening services. To magazines and newspapers I contributed twenty-two articles on birds, animals, forestry and other forms of wild life. I was interviewed by thirty-four newspaper writers, all of whom published such interviews.

During the latter part of winter, reports came of the loss of great numbers



VIEW ON FORD BIRD FARM NEAR DETROIT, MICHIGAN
Under supervision of Mr. Jefferson Butler

of the Bob-white, due to the intense cold and lack of food. Letters were sent to representative men and women in all parts of the state, requesting their aid in seeing that these birds had food and shelter provided. We feel that much useful work was done through the active coöperation of some of these men and women in publishing articles in the press, in securing the help of the rural mail-carriers, and in braving the snow and storms themselves to provide shelter and food. The state Game-Warden, Mr. William B. Oates, aided in every way possible in this matter, as well as in protecting the wild Ducks, Mergansers, Grebe and other water-birds that had been driven from the Great Lakes into the towns, owing to the freezing over of Lakes Superior, Huron and Michigan.

Information came that many hundreds of water-birds appeared along shore, searching for food, and were slaughtered at the springs and air-holes. The game-warden got some convictions in those cases. I sent notices out to the town authorities requesting that the inhabitants be instructed to feed any of these birds that would eat grain. This was done in many instances, and I was informed that the American Golden-eye, Canvas-back, Mallard and Black Duck ate the food, but that the Old Squaw and the Mergansers, as well as the arrivals from the far north, which the inhabitants were not familiar with, refused grain, but ate fish caught for them through the air-holes. Numbers perished at some points, especially at places where no attention was given. Special credit is due to Mrs. A. S. Putnam, of Manistique, for calling attention to the situation in the North. She has been a supporter of the Audubon work for a number of years.

The thanks of the Society are due Mr. J. C. Richardson, Postmaster of Jackson, who instructed the eight rural mail-carriers of his district to carry food and place it in convenient places for the Bob-white, Robins and other land-birds. One carrier reported twenty-four Robins on his route. The grain was supplied by a merchant of Jackson. Mr. Norman A. Wood, of the University of Michigan Museum, reported that a thousand Robins were wintering in a swamp near Ypsilanti. I had an investigation made during February and found these birds were well supplied with wild fruit and weathering the winter cheerfully with the thermometer going as low as sixteen below zero. A larger number of wild birds than usual were reported last winter, due, no doubt, to the fact that the autumn was mild and that there was a greater abundance of wild fruit than usual.

As spring-shooting prevails in this state, the usual gunning before and after the opening of the season was experienced during the past year. However we had watchers covering Grosse Pointe, one of the most bothersome places in the past, with good results and a lessening of destruction.

Contests for prizes were carried on vigorously during the late winter and spring. Books costing sixty dollars were distributed, and twelve bird nesting-boxes were given for merit. Through the efforts of Mrs. Anna Walter, Sec-

retary of the Michigan Audubon Society, and your Field Agent, with the state officials, Arbor and Bird Day were more generally observed, especially through the southern portion of the state. A large number of women's clubs in the state were induced to observe a Bird Day, and many of these clubs have passed resolutions agreeing to coöperate with the State Audubon Society. Mrs. Edith C. Munger, Vice-president of the Michigan Audubon Society, is Chairman of the Audubon Committee of the State Federation of Women's Clubs, and is doing a splendid work in getting the women not only to give up wearing feathers of our wild birds, but to take an active interest in bird-protection. She has coöperated actively with the writer. Miss Jennie E. Buell, editor of the State Grange publication, printed a program on bird-study for the farmers. A certain meeting in each Grange was set aside as a bird meeting. I mailed a large amount of literature to farmers in all parts of the state in reply to inquiries.

Coöperating with friends of the federal bill providing for national control of migratory birds, I visited Washington and went over the situation with numerous congressmen.

During the summer, I visited points on Lake Erie, Lake St. Clair, Lake Huron and Lake Michigan, where wild Ducks congregate in large numbers during migration. Some of the best of the marsh is now in the hands of men who give protection to the Ducks, but, unfortunately, much of it is in the hands of small owners who are draining and clearing the land, which will certainly work to decrease the Ducks in time. The slaughter of wild fowl during the open season at some of these points is beyond all reason, the shooters paying no attention to the bag limit. We shall renew our labors before the legislature to secure a hunters' license in order to raise sufficient revenue for wardens to cover such important points, at least during the spring and fall migrations, and to have spring shooting abolished.

There were large numbers of Common Terns in the vicinity of the Lake Erie marshes, and a few Black Terns and an occasional Herring Gull. The Common Terns nest along the points jutting out into the various bays and the cuts made for drainage. The Black Terns nested in the marshes, but not in great numbers.

While visiting the shore of Lake Huron, I went through the Inland Route from Cheboygan through the Cheboygan River, Mullet Lake, Indian River, Burt Lake, Crooked River and Crooked Lake. There were Wood Ducks, Mallard, Black Ducks and Pied-billed Grebes along the way, many of which were driven in by the cold weather experienced on the Great Lakes. There were a number of young Ducks which I learned were being shot off by the summer resorters. I took the matter up with an assistant game warden and an Audubonist, who agreed to handle the situation.

On Sand Island, in Lake St. Clair, containing about twenty-six acres, June 28, I found a number of half-grown Common Terns. I estimated 1,500

of the parent birds. There were 200 Herring Gulls. I did not find any evidence of the Gulls nesting. The Spotted Sandpipers and Semipalmated Plovers had young on all parts of the island.

The state deeded this island to the United States Government. I found that hunters used the island to shoot from during the Duck season. I took up the question with Dr. T. S. Palmer of having this island set aside as a national bird preserve. It is the only point the Common Terns have for nesting in Lake St. Clair, as the islands without marsh have all been taken for residences. August 24 we estimated the number of birds at 3,000. The number of Gulls had more than doubled, and the Common Tern had increased to 2,000. We also found Solitary, Least and Semipalmated Sandpipers.

We wish to have a large sign erected on the island and to exclude all hunters from using it. The officials of the United States Engineers' office at Detroit say that the lighthouse keeper at the Canal could look after that matter if so instructed.

I spoke at a meeting of the conservation forces of the state at Lansing, in the spring, on birds. While there I took up the question of getting the Forestry Commission to provide sanctuaries for birds in the new forests being set out near Oscoda and Au Sable, as well as providing for small lakes for use of water- and shore-birds.

J. H. McGillivray, Field Supervisor of the Michigan Forest Scouts, joined forces with us. He has more than two thousand boys and youths enrolled. Thomas B. Wyman, President of the Northern Forest Protection Association, became a member of the Michigan Audubon Society, and we have formed an alliance to aid each other in the forestry and bird work.

Hon. Wm. B. Mershon, of Saginaw, author of the 'Passenger Pigeon,' agreed to give fifty medals to the schools of the state for prizes for the best work done for, and the best articles written on, bird-study and -protection. I have written to fifty newspapers in the state calling attention to the matter. Mr. Ben. O. Bush, of Kalamazoo, and Mr. J. H. McGillivray are acting with me on the prize committee. During the year, I have had charge of nine contests for prizes by essays on birds. Mr. Henry Ford furnished the prizes, and with money given by him we have secured a traveling library.

On his farm, Mr. Ford keeps a man constantly employed making bird-boxes and winter shelters. This man carries food daily during the winter, and places it in feeding-boxes, covering about a mile and a half of territory. I have taken fifty-eight persons and clubs over the farm during the past year. Some of the visitors came from the Pacific Coast and many from the Atlantic and the South. New experiments are constantly being tried. Tepid water is provided during the coldest weather by an electric heater, and the birds use the water not only for drinking but occasionally for bathing. Thirty-two bird outings were given during the year, mainly for teachers' and boys' clubs.

The demand for literature, lectures, etc., is too great for our financial

resources, but we anticipate adequate assistance ere long. There has been a demand for bird-boxes and numerous requests for information. I have taken the matter up with Mr. Charles E. Chadsey, Superintendent of Detroit schools, and Mrs. Herman Tryborn, in charge of the manual-training work, and they are willing to have the children aid in every way possible in the making of such boxes. I am now collecting documents on bird-nesting boxes and shelters.

My report would not be complete if I did not mention Miss Clara Bates, of Traverse City, who is doing such a splendid work in publishing a page monthly on humane and Audubon work in one of the city papers. Mrs. Grace Greenwood Brown, of Harbor Beach, is also helping out in this way. On account of the coöperation given the humane societies of the state, I have been commissioned a State Humane Marshal by Governor Osborn.

I have requests to deliver forty-eight addresses during the autumn and winter. I have collected 150 slides, which include both land- and water-birds, which is probably the finest set in the state. I have induced a number of the local humane societies to name Audubon committees. I will endeavor to have all the humane societies in the state do so.

Next summer I hope to be able to find some way to have one of the small islands in Lake Erie set aside as a bird-reserve, and later to take up the question in regard to Lake Huron. I am making a census of the water-birds of the Great Lakes, and already have a fair start in this work.

Mr. John Watkins, who gave the Michigan Audubon Society eighty acres of land near Chassel, Michigan, received an opinion from the Attorney General saying that such land is not taxable. Mr. Watkins reports a good growth of young timber which will be valuable in a few years. We are working for the future, as well as the present. Our motto is "Striving is winning."

REPORT OF WILLIAM L. FINLEY, FIELD AGENT FOR THE PACIFIC COAST STATES

After a search covering several years, I am positive that but one colony of White Herons remains in the state of Oregon, where thousands of these birds formerly lived. A careful survey of the state has been made during the past year.

On July 15, 1912, I visited this colony of American Egrets (*Ardea egretta*) in the southeastern part of Oregon. This colony was first discovered in 1911. It is situated on an island perhaps one hundred acres in extent. On one end of the island is a small bunch of willows. In addition to the White Herons, Great Blue Herons and Black-crowned Night Herons are nesting in this colony. Mr. L. Alva Lewis, who visited the colony earlier in the season, counted eleven nests of American Egrets and twenty-three mature birds. He estimated seventy Night Herons and forty Great Blue Herons in the colony. It contained about the same number of birds last year.

At the time of my visit, July 15, quite a number of the White Herons were grown and were able to leave the nests. At one time I counted twenty-eight birds in one flock standing out in the shallow water of the lake. In one of the nests I saw three young birds not more than a week and a half old. An effort is being made to secure complete protection for this small flock of White Herons by having this area set aside as a reserve.

In order to restock with elk some of the forest areas in Oregon where they were formerly abundant, a herd of these animals was transported



ELK BEING TRANSPORTED TO OREGON FOR RESTOCKING

Photographed by William L. Finley

during the past year from Jackson Hole, Wyoming, to the Wallowa Forest Reserve in Oregon.

This work was done in conjunction with the Biological Survey of the Department of Agriculture. The elk came down from the mountains in large numbers, seeking food during the winter. They were caught in corrals. From four to six of the animals were put into a big crate the size of a wagon-bed, and loaded onto sleds and hauled ninety miles over the Teton Pass to St. Anthony, Idaho. On account of heavy snowstorms, the mountains were almost impassable. It took four days for the men to make the summit of the pass, traveling twenty-eight miles during that time.

Even under these difficulties, the herd reached St. Anthony in fairly good condition. After two days' rest, two bulls, six cows and seven yearlings were loaded into a box-car and hauled to the town of Joseph, Oregon. At this point it was again necessary to load the elk into the crates and haul them forty-six miles north to the place known as Billy Meadows Pasture. Again on account of heavy snows in the mountains, it required four days to reach the pasture.

Several years ago the United States Forest Service built a five-foot wire fence around 2,500 acres of fine pasture land and forest, enclosing this place known as Billy Meadows Pasture. This was done for the purpose of carry-



YOUNG EGRET IN OREGON COLONY

Photographed by William L. Finley

ing on experiments in sheep-grazing. This pasture is now the home of this band of elk. Two strands of wire were added to the top of the fence, making it a seven-foot fence. The experiment was successful, and it is likely that during the coming winter a few more young elk will be added to the herd.

During the past year I made several tours of inspection, visiting our wild-bird reservations in this state. A brief report of these is as follows:

On April 6, 1912, I made a trip to Klamath Lake Reservation. One of the isolated islands in the northwestern part of the lake we found to be occupied by Farallone Cormorants. The most of the nests contained eggs. The White Pelicans were just beginning to nest. I saw very few Gulls and no Terns. Visiting one of the colonies of Great Blue Herons, I found upon investigation that most of the birds were sitting on four or five eggs. In four nests I was very much surprised to find young birds not more than a day or

two old. In other nests the eggs were just hatching. This shows that the Herons are unusually early, as they must have begun laying before the snow disappeared. There were about one hundred pairs living in this colony.

On July 5, 6, and 7, I visited Lower Klamath Lake Reservation again, and found that the Cormorants were fully grown and were swimming about in the lake. Upon visiting some of the large colonies of Gulls and Pelicans, we found that these birds had had a very successful season and reared large numbers of young. Mr. J. J. Furber is the warden in charge of Klamath Lake Reservation.

On June 25 and 26, I visited Three Arch Rocks Reservation, off the Oregon coast, and found that the season there was very successful, as far as the birds were concerned. Mr. Geo. Leach has acted as warden in charge during the past season.

On July 18, 1912, I visited Malheur Lake Reservation, and found that the birds had had a very successful season, with the exception of the colonies of Eared Grebe. These birds nest unusually late. We found one colony containing 165 nests. The largest colony, out in the center of the lake, Mr. Lewis had visited about two weeks previous and found it contained 2,465 nests. Between these two visits, July 13, 1912, however, a heavy storm had swept over the lake and caused considerable damage. Many of the Grebes' nests had been destroyed, and the eggs were floating about in the water. I estimated that one-third of the number, or about eight hundred nests, had been destroyed. The Grebe at this time were sitting on from four to five eggs, and I did not see a young bird.

During the past year, more assistance has been secured from the Biological Survey of the Department of Agriculture in protecting the wild birds on our reservations. On the Klamath Lake Reservation, the Government has installed a power-boat at the cost of over a thousand dollars. This has been a great help to our warden, Mr. Furber, in patrolling.

It was thought that our patrol-boat, "The Grebe," would be of no further use; but recently the Southern Pacific Railroad, under the authority of the United States Reclamation Service, has closed the Klamath River by putting a dike at Ady where their track crosses. This necessitates our keeping two patrol-boats on the Klamath Lake Reservation, one to ply between Klamath Falls and the dike, and the other to be used on the waters of Klamath Lake.

Mr. L. Alva Lewis, who was formerly warden in charge of Klamath Lake Reservation, has been transferred to Portland and given the position of warden in charge of the different wild-bird reservations in the state of Oregon. Mr. Lewis, and the wardens under him, are working in thorough coöperation with the state.

**REPORT OF G. WILLETT, AGENT AND WARDEN
STATIONED ON ST. LAZARIA BIRD-
RESERVATION, ALASKA**

I respectfully submit the following report on condition of birds on St. Lazaria Bird-Reservation, Alaska Territory, during July and August, 1912:

The island of St. Lazaria is situated about one mile from the island of Kruzoff, immediately north of the entrance to Sitka Sound. The island is about a mile long and averages about two hundred yards in width. At its highest point it attains an elevation of a little over two hundred feet above sea-level. The shores are rocky, and in most places abrupt, forming cliffs from twenty to one hundred and fifty feet in height. The top of the island is covered with a considerable layer of soil which extends down on the steep hillsides for a greater or less distance. The higher hilltops are fairly well timbered with spruce and hemlock, around the bases of which are thickets of salmon-berry bushes, which in some places are almost impenetrable. Along the tops of the bluffs, and on the steep hillsides, is a luxurious growth of tall, rank grass. There are two small streams of fairly good water on the island, besides a seepage from the cliffs in many places.

I was on the island the greater part of the time from late July until the latter part of August. Owing to rainy weather, which prevailed during practically my entire stay, I met with very poor success in obtaining photographs.

I found that the birds had not been disturbed by mankind during the present nesting season. There were, however, three different agencies that had been detrimental, to a considerable extent, to the welfare of the nesting colonies. These are the Sitka brown bear, the Northern Bald Eagle and the Northwestern Crow.

The bear is not a resident of St. Lazaria, but is plentiful on Kruzoff Island, and, being a strong swimmer, is easily able to cross the intervening mile between the latter island and the bird-reservation. About the middle of June, some time previous to my arrival in Sitka, a party of Indians returning from a fishing-trip reported that a bear was on St. Lazaria Island destroying the nesting birds. I found upon investigation that the report was true and searched the island thoroughly in hope of finding the marauder at work. There were, however, no bears on the island at the time of my first visit, nor did any put in an appearance during my stay. The freshest sign noted appeared to be several weeks old. I found no evidence that the bear, or bears, had disturbed any of the birds, with the exception of the Petrels. All over the top of the island, particularly on the higher part at the west end, were the excavations of the bear among the Petrel nests. I estimated that at least five hundred nests had been dug up, and the incubating birds eaten, feathers and all. In some cases the primary feathers were not eaten but were left lying among

the ruins. The offal of the bear was composed entirely of the bones and feathers of Petrels.

The only way to prevent a repetition of this is to have a warden constantly on the ground from June until the birds are through nesting. Of course, owing to the great abundance of the Petrels on St. Lazaria, the destruction of approximately five hundred incubating birds and their eggs would not seriously affect the numbers of the species, but if the numbers of the visiting bears were to be materially increased the effect would be much more serious.



REMAINS OF TUFTED PUFFINS AND YOUNG GLAUCOUS-WINGED GULLS IN NEST OF NORTHERN BALD EAGLE. ST. LAZARIA BIRD-RESERVATION, ALASKA

Photographed by Special Agent G. Willett

As to the Crows that inhabit the island, I can find but little to say in their favor. They are always on hand to steal the eggs and young of the luckless Cormorants, and I have even seen them go into the caves and raid the Murre colony. Practically none of the Cormorants' nests contained complete sets of eggs or young, and the ground under the favorite roosting-places of the Crow was covered with shells of Cormorant eggs. It would seem that the extermination of these pests each year at the beginning of the nesting-season, and a continual campaign against others that might put in an appearance while the birds were nesting, would be the only feasible way to put an end to their thievery.

There appear to be only two pairs of Bald Eagles nesting on the island. At the time of my visit the young were nearly full grown, and, judging from the remains of birds in the one nest to which I was able to climb, they must have been blessed with very healthy appetites. It appears also that they are particular as to their diet, for the remains of at least forty birds examined in



WOODPECKER TOTEM POLE, SITKA, ALASKA

Photographed by Special Agent G. Willett

and around the nest were invariably either Tufted Puffins or the young of the Glaucous-winged Gull.

With the exception of the above, the bird-reservation is free from molestation. The Indians understand thoroughly that it is unlawful to trespass on the island, and, so far as I was able to ascertain, no trespass is being committed by them nor by white people. I am also glad to be able to report that the Indians of this locality seem to have practically discontinued the use of

plumage of wild birds for personal adornment. At one time many of their fancy costumes were decorated with bills of the Puffin, tail-feathers of the Flicker, wing-feathers of the Gull, and breasts of the Swan. E. W. Merrill, of Sitka, showed me several Indian garments thus decorated. He informs me that of late years very few birds are killed for their plumage by the Indians. He states, however, that they still kill Swans whenever they have the opportunity, as they consider the flesh of this bird a great delicacy. The Raven, the Woodpecker and the Kingfisher are regarded as sacred by the Indians of southeastern Alaska, and may frequently be seen carved on their totem poles.

St. Lazaria is the only island in the immediate vicinity that is used to any great extent by the water-fowl as a breeding-grounds. On some of the small rocks off Biorka Island, twelve miles to the southward, there are small colonies of Gulls, Cormorants, Guillemots and Puffins, but they are very small and unimportant as compared to the numbers of birds nesting on the reservation.

The following is a detailed account of the birds found on the reservation:

BREEDING WATER-BIRDS

Lunda cirrhata. Tufted Puffin.

Breeding abundantly all around the island on the edges of the bluffs. The burrows are dug into the soil among the grass roots to an average depth of five feet. Nest cavity is thinly lined with dry grass. Most of the nests examined contained downy young by July 31. Estimated number of pairs nesting on island, 2,000.

Fratercula corniculata. Horned Puffin.

Probably a dozen pairs nesting in crevices of overhanging cliffs. On August 15, three pairs of these birds were observed carrying small fish into crevices in a cliff on the northeast side of the island. They were undoubtedly feeding young, as both birds were engaged in carrying fish. I succeeded in climbing to within a few feet of the entrances to the nest crevices, but was unable to see far enough in to ascertain their contents.

Cerorhinca monocerata. Rhinoceros Auklet.

This bird has not been previously recorded as breeding on the reservation. I found, however, unmistakable evidence that a colony of from fifty to a hundred pairs had nested and raised their young previous to the time of my arrival on the island. This colony was situated on the north slope about one hundred and fifty feet above the water. The burrows were in the ground among the roots and stumps of trees. They measured less in diameter than those of the Puffin and averaged seven to eight feet in length. There was apparently no attempt at nest-building. Most of the burrows examined were empty, the young having apparently taken to the water some little time

previous to August 2, the date I discovered the colony. In one cavity was a dead female in breeding plumage. She had evidently been crushed to death by a bear who in walking had caved in the burrow. In the nest-cavity, back of the dead female, was a single dead young bird nearly full grown. From the condition of the bodies, I should judge that the birds had been dead for at least two weeks. It is probable that the eggs are laid in late May and early June. The birds were plentiful on Sitka Bay during my entire stay.

Cephus columba. Pigeon Guillemot.

Very common, feeding in the kelp beds near the shore. Frequently seen to enter and leave crevices in the cliffs and roofs of caves. Estimated number of pairs nesting on the island, 150.

Uria troille californica. California Murre.

About three hundred pairs were nesting on the floor of a large cave on the southwest side of the island, from twenty to eighty feet above the water. A few pairs were also nesting on a nearby cliff. On August 1, I succeeded in climbing up into the cave where the large colony was located and found the rocky floor to be covered with downy young and eggs in different stages of incubation. In many instances the eggs and young were lying in puddles of mud and slime. Murres were plentiful all over Sitka Bay, following schools of small fish.

Larus glaucescens. Glaucous-winged Gull.

Nesting commonly in crevices in the rocks and among the grass on the brows of the cliffs and on top of the smaller hills. Most of the nests contained large young by August 2. During all the time I was on the island, I did not see the Gulls robbing the nests of the other birds. It seems that this species does not possess the thieving propensities of his southern relative, *occidentalis*. I was considerably interested in observing the swimming-lessons given the nearly grown young by the adult birds. In some cases where the young seemed afraid to take to the water, they were shoved from the rocks by the old birds. The old bird would then swim beside the young one, occasionally poking it with her bill. I was unable to satisfy myself whether this was meant as a caress or as punishment or poor swimming. Estimated number of pairs nesting on the island, 300.

Oceanodroma furcata. Forked-tailed Petrel.

This species, although much less plentiful than the next, was nesting in some numbers. The burrows were dug on steep, grassy slopes, generally to a depth of about three feet. They were exceedingly crooked, and in some instances the nest-cavity would be very close to the entrance. The nest itself was rather a shallow affair, composed of rootlets and grass. One or two eggs on the point of hatching were noted, but most of the nests contained young birds, some of which were nearly full grown. The newly hatched young are covered with thick gray down, except the throat and face, which are nearly naked. On the back of the head is a tuft of down somewhat darker than that of the

body. The first feathers to appear are those of the wings and tail, closely followed by those on the back of the head and throat. Then comes the beautiful gray covering of the back and upper tail coverts, and shortly afterward the mature feathers replace the down on the chest. The last down to disappear is that on the lower abdomen. When this leaves, the young is very similar in plumage to the adult bird. The tail, however, is not so deeply forked, the white patch on the throat is streaked with gray, the forehead is dark gray instead of brownish, and the general coloration of the back, wings and tail is darker than in the adult. Estimated number of pairs breeding on the island, 2,000.

Oceanodroma beali. Beal Petrel.*

As the white-rumped Petrel on St. Lazaria Island appears to be uniformly smaller than *O. leucorhoa* of the Atlantic coast, thus bearing out the characters ascribed by Emerson to the form *beali*, I have referred it to this form. It is by far the most abundant breeding bird on the reservation. Everywhere on the island where the soil is deep enough are found the burrows of this bird. The burrows and nests are similar to those of the last species but are found in thousands on the flat top of the island among the timber and brush, where *furcata* does not seem to occur. Also they evidently nest considerably later than *furcata*, as no very large young were seen and a few fresh eggs were noted as late as August 15. The down on the back of the newly hatched young is dark brown, on the breast and abdomen it is considerably lighter. The throat, lores and thighs are nearly naked. The young of both this and the last species become very fat when a few days old. Upon being picked up they invariably vomit a considerable quantity of musky oil, a characteristic of the Petrels, both young and old. One of the adult birds may be found on the nest during the entire period of incubation and until the young bird is three or four days old. After this time the young is alone during the entire day, both old birds going to sea at daylight and returning at dusk. Estimated number of pairs breeding on the island, 20,000.

Phalacrocorax pelagicus pelagicus. Pelagic Cormorant.

Although the American Ornithologists' Union Check-List refers the Cormorant occurring in the Sitkan district to *P. pelagicus robustus* Ridgway, specimens taken by me do not seem to substantiate the validity of this form. Therefore I refer the Cormorant breeding on St. Lazaria to *P. pelagicus pelagicus*.

The Pelagic Cormorant nests rather plentifully on ledges of cliffs all around the island as well as in some of the caves. The nests are built of sticks and seaweed, lined with grass and sea-moss. Nearly full-grown young were noted July 31, and eggs were seen in some nests late in August. Owing to the depredations of the Crows, very few of these birds succeed in raising an entire brood, and I believe there are many who are unable to raise a single young. When

*Emerson, Condor VIII, 1906, p. 54.

frightened from the nest, they very foolishly fly a considerable distance to sea and often remain for several minutes at a time. This opportunity is quickly seized by the Crows, and in an almost incredibly short time the Cormorants' nest is empty. Many of the breeding birds have little or no white on the flanks, and, in many cases, the nuptial plumes on the neck are not present, or are very poorly developed. The immatures, that is, the birds raised the previous year, are abundant all over the bay, following the schools of small fish. The breeding birds are not seen at any great distance from the nesting colony. Estimated number of pairs nesting on the reservation, 150.

Hæmatopus bachmani. Black Oyster-catcher.

At least four pairs of these birds breed on rocky points of the island. At the time of my visit, the young were full grown.

SUMMARY OF BREEDING WATER-BIRDS.

	Pairs
Tufted Puffin.....	2,000
Horned Puffin.....	12
Rhinoceros Auklet.....	75
Pigeon Guillemot.....	150
California Murre.....	300
Glaucous-winged Gull.....	300
Forked-tailed Petrel.....	2,000
Beal Petrel.....	20,000
Pelagic Cormorant.....	150
Black Oyster-catcher.....	4
Total.....	24,991

The following is a list of land-birds breeding on the island, with estimated number of pairs:

	Pairs
Northern Bald Eagle.....	2
Northwestern Crow.....	25
Sooty Song Sparrow.....	400
Townsend Fox Sparrow.....	100
Western Winter Wren.....	10
Chestnut-backed Chickadee.....	25
Dwarf Hermit Thrush.....	40
Varied Thrush.....	20
Total.....	622

The following migrants were noted on the island or on the ocean within a mile of the island:

Gavia immer, Loon; *Synthliboramphus antiquus*, Ancient Murrelet; *Brachyramphus marmoratus*, Marbled Murrelet; *Rissa tridactyla pollicaris*, Pacific Kittiwake; *Larus philadelphia*, Bonaparte Gull; *Puffinus griseus*, Sooty Shearwater; *Harelda hyemalis*, Old Squaw; *Histrionicus histrionicus*, Harlequin

Duck; *Oidemia deglandi*, White-winged Scoter; *Lobipes lobatus*, Northern Phalarope; *Pisobia minutilla*, Least Sandpiper; *Pelidna alpina sakhalina*, Red-backed Sandpiper; *Ereunetes mauri*, Western Sandpiper; *Heteractitis icanus*, Wandering Tattler; *Actitis macularia*, Spotted Sandpiper; *Ægialitis semipalmata*, Semipalmated Sandpiper; *Arenaria melanocephala*, Black Turnstone; *Falco peregrinus anatum*, Duck Hawk; *Ceryl alcyon*, Belted Kingfisher; *Selasphorus rufus*, Rufous Hummingbird; *Corvus corax principalis*, Northern Raven; *Loxia curvirostra minor*, Crossbill; *Melospiza melodia caurina*, Kadiak Song Sparrow; *Dendroica æstiva rubiginosa*, Alaska Yellow Warbler; *Planesticus migratorius propinquus*, Western Robin. The last six species may occasionally breed on the island.

In conclusion, I should recommend the future employment of a warden on St. Lazaria Reservation from June 1 to September 1.



REPORTS OF STATE SOCIETIES

California.—We are delighted to report a most prosperous year in the work of the Audubon Society of California. There have come to us, from widely separated portions of the state, more calls than usual for leaflets and information in regard to the work, showing that gradually our educational campaign is reaching into the most distant parts of this great commonwealth. In response to these, we issued an excellent leaflet on the economic value of birds, a digest of the state game laws, and a list of publications helpful in bird-study. We also had printed large pasteboard cards warning the public against bird-killing.

Miss Gretchen L. Libby, who started her work as School Secretary for this Society, has been doing splendid work as Educational Assistant to the



CALIFORNIA AUDUBON SOCIETY AT OUT-OF-DOOR MEETING
LOS ANGELES, CALIFORNIA

State Fish and Game Commission. She is the author of an excellent bulletin, 'Bird-Study in the Schools,' which the Commission is distributing among the teachers of the state. Miss Libby visited 30 counties, 87 towns, 154 schools, giving 400 talks in which she reached 25,000 people, including adults and children. Besides these lectures given by Miss Libby, several have been given in the southern part of the state by other Audubon workers. During last August our National Secretary, T. Gilbert Pearson, visited the state, and gave three splendid illustrated lectures in Los Angeles, Pasadena and Riverside. These were well attended and much good to the cause is resulting from them.

For the greater part of the year we edited an Audubon Page in the 'Federation Courier,' which is the official organ of the Federated Women's Clubs of California, Utah, and Nevada. In this way the work of the Society reached thousands of women who otherwise would know nothing of it.

The past year has seen in Los Angeles the completion of a splendid public museum building. Though not as yet formally opened to the public, Mr. Charles Daggett, a prominent member of the Cooper Ornithological Club, has been elected curator, and is rapidly installing habitat groups of birds, skins, nests, eggs, photographs and paintings. Upon request of the artist, Mr. Bruce Horsfall, the McClurg Publishing Company, of Chicago, has loaned to this Society, for exhibition in this museum, the seven original paintings which were to illustrate Mrs. Irene Grosvenor Wheelock's 'Birds of California.'

During the year, the Cooper Ornithological Club appointed a Committee on the Conservation of Wild Life in California. Through this committee an effort is being made to band together all organizations in the state that are interested in the preservation of the wild life, and we will work together for better laws along this line. Many game-birds of the state are disappearing, and an effort will be made at the coming session of the legislature to secure needed restrictions in the hunting laws.

With public sentiment greatly in favor of our work, with the newspapers of the state endorsing our efforts, we look back upon a year of good work and press forward to greater activities.—HARRIET WILLIAMS MYERS, *Secretary*.

District of Columbia.—Since our last report we have had four public lectures,—the first a delightful illustrated one by Mr. William L. Finley, his subject being 'Wild Bird Reservations.' At our annual meeting, in January, we were fortunate in having with us Mr. C. William Beebe, who gave us an intensely interesting and beautifully illustrated lecture entitled, 'A Naturalist in Ceylon and the Himalayas.' Our old officers were reelected upon this occasion, and our treasurer reported a goodly balance on hand.

The third entertainment, 'Our Wild Song Birds,' was by Mr. Edward Avis, and was most enjoyable. This was repeated the next afternoon for the benefit of our Junior Members, and to interest the school children. It was given in the lecture hall of one of our large school-buildings, and long before the time for beginning, the hall was packed, and they were obliged to close the doors and turn many children away. Our last lecture was by Mr. Jefferson Butler on 'The Henry Ford Bird Preserve.'

On the evening of March 6, our Society gave a reception to its members and their friends at the charming home of Mrs. John Dewhurst Patten, our former Secretary and the founder of our Society. Owing to the inclemency of the day, the attendance was smaller than we had hoped for, but all present seemed to enjoy themselves, and we had a most delightful surprise in the unexpected pleasure of having Mr. T. Gilbert Pearson, of New York, our

National Secretary, and Dr. George W. Fields, of Boston, with us for a part of the evening, both of whom gave us charmingly informal talks.

We have had our usual bird-study classes under the efficient leadership of Mrs. Florence Merriam Bailey, followed by five field meetings, all of which were well attended.

During the year we published a history of our bird-study classes from their first formation in 1898 to the present time.—H. P. CHILDS, *Secretary*.

Florida.—Owing to ill health, Mr. Dommerich resigned in February the office of President of the Florida Audubon Society, and at the annual meeting held in March, at Maitland, Dr. William Fremont Blackman, President of Rollins College, Winter Park, was chosen to fill his place, Mr. Dommerich being made President Emeritus. At the same time, the Executive Committee was reorganized so as to extend the interest more widely. It was with deep regret that news was received of the death of Mr. Dommerich on July 23, in New York. We would here publicly acknowledge our appreciation of Mr. Dommerich's devotion to the interests of the Society since its foundation.

The general outlook in the state is favorable. Literature has been widely distributed among schools, clubs, and societies wherever possible. Printed cards showing a summary of the Florida state laws have been conspicuously posted, but even these are unheeded, as the game 'bag' of some gunners on the St. Johns River was found to contain, among other birds, eleven Laughing Gulls and a Blue Heron. Complete ignorance as to laws for illegal shooting was expressed by these men, and also by the Jacksonville city officials to whose attention the matter was brought.

'Robin hunting' was a favorite diversion during the past year, when not only Robins, but numberless small birds (insectivorous and weed-seed-eating) were slaughtered. Another 'bag' reported to us contained "six dozen Robins, six Turtle Doves, six Ground Doves, besides Meadowlarks and White-throated Sparrows." It is the urgent wish of this Society that Robins shall be put on the list of protected birds, and that game-wardens shall be fined who do not arrest persons shooting them.

Mrs. Kirk Monroe is now on the Executive Committee. She is also Chairman of the Bird Protection Committee of the Federation of Women's Clubs, but still continues her interest at Cocoanut Grove, where the Library Club has offered a prize of ten dollars to the boy or girl writing the best bird story. Bird Day has been observed by nearly all the clubs of the Federation, and many meetings have been held.

The prize of ten dollars offered by Doctor Blackman for the best essay on 'Bird Protection,' to any boy or girl in the high schools of the state, was won by Henry T. Dunn, of Jacksonville, Class of 1913.

At St. Petersburg, Mrs. Tippetts reports many meetings and an exhibition

of crayon drawings of birds by pupils of the grammar schools. Prizes were given for 'Bird lists.'

Mrs. Bradt is ever-faithful in pleading for birds through the Sunshine Society. Mrs. Haden, at Orlando, Miss Crosby, at San Mateo, Mrs. Roe, of Orange City, and Mrs. Coulson, of Bradentown, were busy all winter with meetings and working for the better enforcement of laws. Encouraging words come from Inspector-Warden Pacetti of the conditions about Mosquito Inlet. On various unprotected rookeries we feel more men are required, for there has been much shooting of Egrets, showing that all money sent to the Egret Fund is needed for their protection.

We have now in Florida ten Federal Reservations. People in general may not realize the great difficulty, the discomfort, often danger, connected with visiting the swamps and isolated spots where the birds have their rookeries. During the winter some most interesting talks on 'Bird Notes' were given by Dr. Henry Oldys, of Washington, D. C.

Swifter, surer and more wonderful in flight than any aeroplane is that winged troop that surges back and forth over the North American continent twice every year! The mystery of mysteries is this migration of birds, doubtless planned for the ultimate benefit of man; therefore, let man see to it that laws are made and enforced to prevent the reckless slaughter of these lightning-express voyagers of the air.—MRS. KINGSMILL MARRS, *Chairman of Executive Committee.*

Illinois.—The Fifteenth Annual Meeting of the Illinois Audubon Society was held May 18, 1912. The Society was fortunate in securing the services of Mr. T. Gilbert Pearson, of New York City, who gave a most interesting lecture on the 'Conservation of Bird Life.' The following officers were elected for the ensuing year: Mr. Ruthven Deane, President; Miss Mary Alma Hardman, Secretary; Miss Amalie Hannig, Treasurer.

The Society feels a great loss in the resignation of Miss Mary Drummond from the secretaryship. Miss Drummond, in her fifteen years of service, has largely made the Society what it is today. Her intimate acquaintance with the work and her keen interest in the teachers and children of the state, as well as in the protection of the birds, have won for the Society many friends. Her interests are still with the Society, although at present she can give little time to the work. She has accepted a position on the Board of Directors, and in this capacity we shall still have the benefit of her counsel and guidance.

The Society has made some noteworthy progress during the past year, as is shown in the following extracts from the Secretary's annual report:

"Our routine work has gone on showing growth in many ways. The libraries and sets of pictures have done far better work than last year, while the lectures have been used nearly three times as often. Leaflets to the number of 16,376 have been distributed as against 9,819 last year. Our editions of

the list of bird books and periodicals prepared by our President, and the sketch of Audubon's life by Mr. E. B. Clark, have been exhausted. New editions have been prepared, and we have in preparation by Mr. DeVine a list of the birds of both northern and southern Illinois. In response to a telegram from the office of the National Association in the season of the bitter cold and scarcity of food, articles were printed in some of our newspapers, and hundreds of cards, calling attention to the need of food and shelter for birds, were circulated throughout the state. In this matter we were greatly aided by that good friend of the birds, Mr. McKeene, State Secretary of our Farmers' Institute.

"For years it has been our ambition to keep in stock all of the valuable educational leaflets issued by the National Association. This year that ambition has been realized, as we were able to invest \$100.00 for this purpose, and we were also aided by the generous gift of \$25.00 worth of leaflets from the National Association, for which gift we owe many thanks. We hope to be able, in many cases, to sell sets of these leaflets to those able to buy them.

"In 1909, we placed four bound volumes of leaflets in places like Hull House, Academy of Sciences, Anti-Cruelty Society office, etc. Last year we placed twelve such volumes, largely in public libraries of the state as well as in our own city libraries. We have now ready another set of these volumes.

"Our membership shows an increase of 37 new adult and 784 Junior members. A number of our Associate and Regular members have promoted themselves to the Active list."

It is the hope of the Society to place a traveling secretary in the field, whose duty it shall be to present the work of the Society to the farmers at their associations, to teachers at their institutes, and to people at any public gathering where they may be interested in the protection of the wild life about them. Illinois should not be behind any other state in the protection of her birds and animals. The sale of wild-bird plumage should be prohibited. To secure this for the state, we need an endowment large enough to keep an energetic young man in the field for at least two years. We cannot hope to gain our ends without educating the people to the value of the birds and animals, and we cannot educate them without going to them. We hope by next year to be able to report the work of such a traveling secretary.—MARY ALMA HARDMAN, *Secretary*.

Indiana.—The report of our state meeting at Madison, in May, I sent you some time ago, and it was printed in BIRD-LORE. Last week a Junior Audubon Class was formed at Hammond, Indiana. Miss Herndon, of the Irving School, wrote me for the particulars in relation to the forming of such a society. Mrs. Wilson, our Extension Secretary, attends to this work, and I am sure that by this time Indiana has another local society. I am more than proud that it is a Junior Society.

I talked with Mr. Amos W. Butler today. He has many good suggestions on bird-protection, so a meeting of the Indiana Audubon Society is called for Monday, October 28, 1912, in Mr. Butler's office, Room 93 State House, at 3.30 P.M.

The place of next spring's meeting will be discussed, lending a helping hand toward the Arbor and Bird Day Annual to be issued this year, and better bird-protection in Indiana—all these, and more important questions, will be discussed.

Of course, you know the Indiana Nature Study Club belongs to the Audubon Society. This club has tramps every two weeks, beginning in late spring, and continuing all summer up to October. In winter we have lectures every two weeks by such men as Dr. C. F. Hodge, Professor Mills, of Colorado, and Mr. Alden Hadley, who has spent much time in Florida, and has told us of our summer residents down there in winter. In this club there are over a hundred members, with a small percentage of young people.

Mr. William Watson Woollen is President of the Nature Study Club. Some of the members who came into the Nature Study Club have also joined the Audubon Society. All of this thought for the wild birds, together with the excellent work of Miss McClellan, who is at the head of nature work in the city schools, has spread, until it seems the fashion to have some song-bird's nest in one's yard.

I am sending Mr. Stockbridge's report from the Allen County Audubon Society of Indiana.—ELIZABETH DOWNHOUR, *Secretary*.

Maine.—Lectures before local branches have been given in some parts of the state. Local secretaries, in several instances, have given talks before schools and Sunday-schools, illustrated by lantern-slides.—ARTHUR H. NORTON, *Secretary*.

Maryland.—An effort was made by the Maryland Audubon Society to have passed at the last session of the Maryland Legislature an anti-plumage bill, which would have prevented the importing of any insectivorous birds for millinery purposes. In its effort, the Society had the support of the entire press. This was one of many reform bills presented to the Maryland Legislature. But Maryland, with the other states of our country, will have to learn that she must elect the right kind of law-makers before she can hope for model laws.

The consideration of the bill was skilfully postponed until in the rush of the last few days there was no time to deal with it.

However, there resulted a closer union throughout the state of those interested in bird-protection, an increase to the Audubon Society of some valuable workers, and consequently a brighter prospect of winning our fight in the future.

About fifteen measures, strengthening game-protection in various counties, were enacted.—MINNA D. STARR, *Secretary*.

Massachusetts.—Since the last report our Society has gained 3,174 members. Our total membership is now 11,655, which includes 6,254 Junior members.

As usual, we have sent out many educational and other leaflets, warning notices in English and Italian, and copies of the laws. Our three traveling lectures and four traveling libraries have been in demand, while our bird-charts and plates have continued to meet with a good sale. Through the courtesy of Prof. Albert T. Morse, our charts, calendar-plates and leaflets were exhibited at the Essex Institute.

Our Society always takes a strong interest in legislation and this year has not been an exception. Fewer cases of violations of law have been reported than usual.

Cards urging women not to wear aigrettes, and some giving the address of the Society and inviting people to join it were placed in the street-cars for two months.

Letters were sent to the women's clubs in the hope of enlisting their interest and gaining members.

Early in the year we learned that one of our members had proved her interest in our work by giving us a legacy.

In March we received an invitation from the National Association to join in their movement to start Junior Classes in the schools, which we accepted with pleasure. It has proved to be one of the most successful plans we have ever tried. We were able to report ninety-two classes to Secretary Pearson before school closed in June, adding 1,772 Junior Members to our Society. During the summer we got a good deal of material ready to send out this fall, and already have received thirteen classes, containing 303 members, since school opened. A number of school superintendents and teachers have expressed much interest and enthusiasm for the work, and we appreciate the kindness and help given by the National Association and the friend whose generosity has made it possible.

In addition to the usual monthly meetings of the Directors, we have had a course of four lectures by Mr. Herbert W. Gleason, Mrs. Kate Tyron, Mr. Clinton G. Abbot and Mr. Louis Agassiz Furtess, and a meeting to which the public was invited, at which one of our Directors, Mr. Francis H. Allen, presided and gave a brief report of our work, followed by short addresses from Dr. George W. Field and Mr. Edward Howe Forbush, and an illustrated talk by Mr. William Lyman Underwood. After this meeting a tea was given to the local secretaries and the teachers who had started Junior Classes by one of the Directors at her home in Cambridge.

This year we are bringing out a beautiful new calendar; also a new bird-

chart from a drawing by Mr. Fuertes, which is being published for us by the Milton Bradley Company, of Springfield.

In September the services of Mr. Winthrop Packard were secured as Field Secretary of the Society. Mr. Packard is widely known as a writer on nature topics and the author of many successful books. He has begun an energetic campaign for increased membership in the society, instructing and encouraging local secretaries, and teachers of Junior Classes.—JESSIE E. KIMBALL, *Secretary*.

Michigan.—By the earnest efforts of Jefferson Butler, President of the Michigan Audubon Society, great good is being brought about directly and indirectly. In the past year he has given sixty-seven lectures before various organizations, including colleges, schools, women's clubs, sportsmen's clubs, church societies, fraternal organizations. He has directed several outings for boys as well as for adults, organized twenty Junior Societies, decided seven contests for prizes in schools and wrote twenty-two articles for magazines and newspapers. Mr. Butler's earnestness took him to Washington, where he addressed a number of congressmen on the bill giving the federal government control over migratory birds. During the year he deemed it advisable to prosecute nine cases and posted fifty signs on public highways and in inter-urban cars; also gave warning notices on twenty-two complaints of infraction of game law.

Governor Osborn has appointed Mr. Butler State Humane Marshal, and he is now in a position to further his good work more directly. He is taking up legislative matters, and proposes a bill prohibiting the selling of aigrettes, providing for a Game Commissioner and a hunters' license bill and the abolishing of spring-shooting. He is also negotiating with the national government to have one of the islands in Lake St. Clair set aside as a national preserve and nesting-place for Terns and Gulls.

Credit is due Clara Bates, of Traverse City, for the splendid efforts for bird-study and bird-protection by interesting her readers of the Sunshine Department in the Traverse City paper which she edits. Grace Greenwood Browne has aided in the good work with articles in the Harbor Beach Times, especially interesting to the boys and girls as well as adults.

The Michigan Federation of Women's Clubs have an Audubon Committee of which Mrs. Edith Munger, of Hart, is Chairman, and through this committee many women's clubs are reached as well as schools. The Secretary has delivered several addresses before women's clubs, schools and other gatherings—she has also distributed hundreds of pages of literature, including books on birds and their habits; written articles for the press; had built and distributed bird-houses among the children to place about their homes, in parks and cemeteries.

Mr. Wm. B. Mershon, of Saginaw, will again this year give medals to the

schools of Michigan for the best essays submitted on birds, as follows: (1) Medal for best essay on 'Esthetic and Educational Value of Song and Insectivorous Birds.' (2) Medal for best essay on 'Economic Value of Birds.' (3) Medal for essay showing greatest knowledge from personal observation of life and habits of our common birds. (4) Medal to school or person making most successful effort in feeding Quail or other birds during the winter of 1912-13. (5) Medal for school or person doing most efficient work in protecting birds during summer of 1912. (6) Medal for school or person building and protecting most successfully used bird-house. (7) Medal for the two best photographs, taken in any part of the state, of a wild bird or birds.

The Superintendent of Public Instruction caused pamphlets on 'Common Birds of Michigan' to be distributed in the schools, the Secretary of the Audubon Society distributing 6,000 in rural districts; also distributing among the farmers hundreds of pamphlets and bulletins secured from the United States Government.

Men, women and children throughout Michigan are joining the army of energetic workers out for bird-protection.—MRS. ANNA WALTER, *Secretary*.

Minnesota.—A number of public lectures were given in the schools of both St. Paul and Minneapolis on game- and bird-protection and bird-study. Articles on birds and bird-study were contributed to the papers of the state, and the study of birds was encouraged in the boy scout organization.

During the coming winter the legislature of the state will meet, and an effort will be made to have all hunting and shooting prohibited around White Bear Lake and Lake Minnetonka, which are the summer resorts of St. Paul and Minneapolis people.—DIETRICH LANGE, *President*.

New Jersey.—The Society has made very good progress along the lines of its various activities during the second year of its existence. Notwithstanding the inevitable loss from removals, resignations and deaths, the membership has been increased by 4 new Patrons; 5 Life Members; 91 Members; 14 Sustaining Members; 22 Associate Members, and 8,920 Junior Members, making a total membership of 10,485 on October 3, 1912, as against 1,076 for October 3, 1911.

Legislative work during the year was confined to advocating the passage of certain beneficial measures introduced by the Fish and Game Commission, and opposing some undesirable bills. The most important legislation which this Society had to consider was Assembly Bill No. 50, providing for a bounty on the scalps of Hawks, Owls, weasels and foxes, which was earnestly combated and fortunately failed of passage.

The enforcement of the Audubon Plumage Law by the Fish and Game Commission has been so wise, and yet energetic, that our Society has not been obliged to devote any attention to the matter. Several prosecutions

have been had for violation of this law, as has been previously recorded in BIRD-LORE, and fines in two cases in Trenton netted \$460.

Twelve illustrated lectures were given at farmers' institutes on the economic value of birds, a public lecture at Woodbury, and one at the Y. M. C. A. Boys' Camp, Lake Wawayanda.

One of the principal fields of activity on the part of the Society during the past year has been the stimulating of bird-study in the schools. By a plan of coöperation with the National Association of Audubon Societies a scheme for such study was offered to the teachers of the state. Every teacher forming a Junior Audubon Class of ten or more members and sending in the names with dues of ten cents each, received the magazine BIRD-LORE for one year free. She also received a number of special leaflets on bird-study and -protection for herself, and a set of ten Educational Bird Leaflets with colored plates and outlines for coloring for each member of her class. Each member of such class received a Goldfinch Audubon button and became a Junior Member of the Society.

By this means there were formed in the state of New Jersey 411 Junior Audubon Classes, with a total membership of 8,910 prior to the close of the class season, June 15. This was nearly half of the total result of such work in eighteen states operating under this plan, showing how readily the teachers and school children of New Jersey appreciated the importance as well as pleasure of such study.

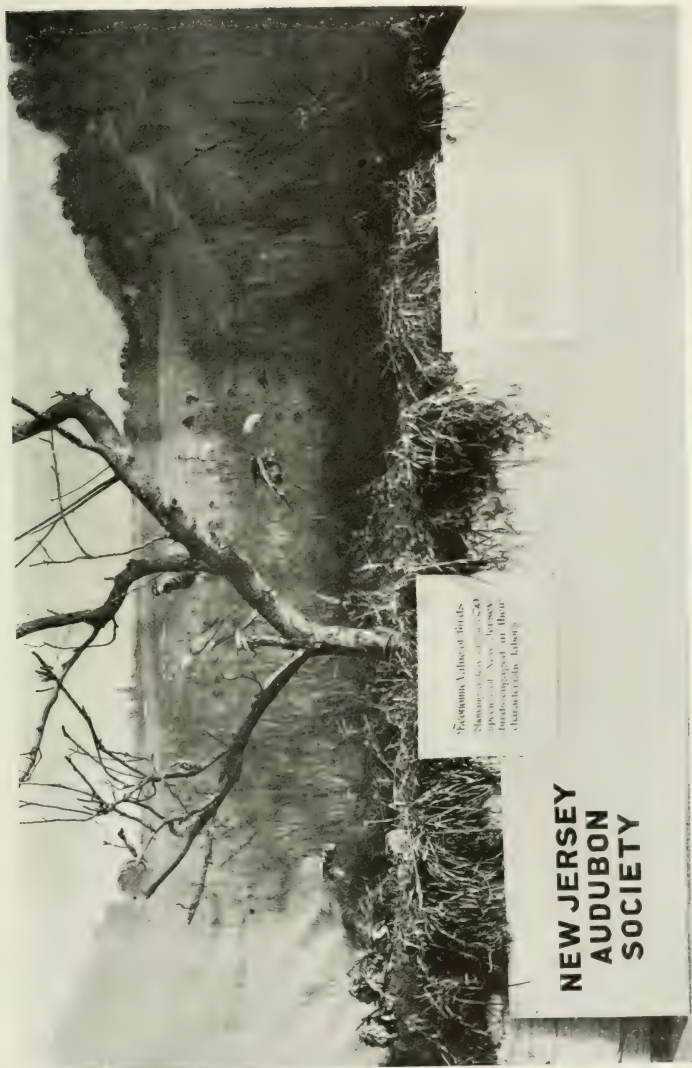
The largest Junior Audubon Class organized (in New Jersey or elsewhere) was that formed by Miss Ina C. DeWitt, of Tenaflly, comprising 279 members. The second largest class was organized by Miss Florence Cook, of Passaic, with eighty members.

The first class, twenty-five members, was sent in by Miss Hilda E. Pierson, of Lawrenceville, on February 26, and the last, eleven members, by Miss Vera Stearns, of East Orange, June 3.

The 411 classes were scattered through 138 towns and every county in the State. Newark led with 54 classes; Bayonne was next with 19; Perth Amboy had 17; Montclair, 16; Vineland, 12 and Woodbury, 11. Other towns ranged from 1 to 8. Bergen County furnished the greatest number of towns in which classes were organized—18. The enthusiasm of both teachers and pupils was abundantly attested by many letters received from teachers.

The annual Montclair epidemic of Blackbirds and Starlings, with the attendant newspaper discussions, appeared on time. The Fish and Game Commission handled the matter with excellent judgment and, while the Society kept careful watch on the situation, it was not necessary for us to take any action. Wardens of the Commission used various methods to frighten the birds from the shade trees, and the tempest in the teapot was abated.

The Society maintained an exhibit at the Mount Holly Fair, October 8 to 11 inclusive, consisting of mounted groups of birds, showing economic



Economic Value of Birds
Showing a list of 100
species of New Jersey
birds employed in their
characteristic labors

NEW JERSEY AUDUBON SOCIETY

NEW JERSEY AUDUBON SOCIETY EXHIBIT, SHOWING ECONOMIC FEEDING HABITS OF BIRDS
Exhibited at the New Jersey fairs

value of feeding habits, exhibited at the Inter-State Fair, Trenton, last year; bird books; enlarged photographs of various birds from life; display of aigrette plumes, illegally offered for sale and seized by the Fish and Game Commission; colored bird charts and the sign cards of the Society.

The measure of success attained by the Society during its brief existence and the importance of the work that demands its attention suggest the earnest hope that some of the many wealthy and philanthropic people of New Jersey may see fit by gift or bequest to provide an endowment fund which shall insure permanency of financial resources.

The annual meeting was held at the Washington, Newark, on October 15. The business session of the Society convened at 4 P.M. The Board of Trustees serving during the past year were unanimously reelected.

The report of the Treasurer showed receipts of \$2,131.57, expenditures of \$1,345.83, and a balance in the treasury of \$785.74.

The annual meeting of the Board of Trustees immediately followed that of the Society. The officers serving during the past year were unanimously reelected as follows: President, Mr. George Batten, Montclair; Vice-President, Mr. W. DeW. Miller, Plainfield; Treasurer, Mr. John T. Nichols, Englewood; Secretary, Mr. Beecher S. Bowdish, Demarest.

The Board appointed an Executive Committee, to consist of the officers and Mr. W. W. Grant, Englewood, and Col. Anthony R. Kuser, Bernardsville.

The public session convened at 8 P.M. and illustrated stereopticon addresses were given by Mr. Frank M. Chapman on 'A Search for a Flamingo City,' and Mr. T. Gilbert Pearson on 'Audubon Work.'—BEECHER S. BOWDISH, *Secretary*.

New York.—It is a pleasure to report the progress being made in bird-protection in this state. The interest is manifested in many ways by both old and young. The distribution of Audubon literature is constantly increasing, owing to requests for larger supplies to meet existing needs, as well as for the opening of new fields for the work. The teachers are, as they have ever been, our loyal fellow-workers, and in the schools a continual advance has been made.

The fidelity and earnestness of purpose of many of our local secretaries also cannot be too highly commended.

The present total membership is 13,683.

The list of books for bird-students has been revised and a larger edition has been issued.

We are soon to place twenty or more traveling libraries in the hands of the Educational Extension Department of the State Library at Albany for circulation. The Audubon leaflets will also be supplied for the children's rooms and tables in various libraries throughout the state.

The idea which was formed last year of extending the work in a systematic manner throughout each county of the state is meeting with marked success in the schools. Through the teachers' institutes, and by securing the coöperation of the county superintendents of schools, every teacher in a county may be reached. This method is particularly desirable with so extensive a ground to cover as is the state of New York, and in several counties is achieving excellent results. In one instance a recently appointed local secretary, an enthusiast in bird- and animal-protection is district superintendent with seventy-two schools under her charge.

The Buffalo Society is now fully organized, with a very able governing board, the members of which are working upon various standing committees and are pushing the cause of bird-protection vigorously in western New York. All of the members of the Buffalo Society have recently joined the State Society.

With the reopening of the schools, the requests from teachers for supplies of Audubon material are very numerous and there is every indication of a very active campaign for the coming year.—EMMA H. LOCKWOOD, *Secretary*.

North Dakota.—The Audubon work in North Dakota was reorganized early in May, 1912. At that time new officers were elected, including a new Board of Directors, and the place of business was transferred from Grand Forks to Fargo. We have been proceeding steadily with the work of reorganizing the Association and securing a substantial membership. The work has progressed somewhat slowly because we began the reorganization just as the summer season was approaching and many of our people have been out of the city. Likewise the school men of the state have been on their vacations, and it was not possible to make progress through the schools. A substantial beginning, however, has been made. The plans for future work are pretty well outlined so that we feel from now on we ought to make good progress. There appears to be a very good spirit among the members; in fact, we are looking only for live members who are interested in the work of the Society.

The membership is not large as yet, being about thirty paid-up members. That, however, is a larger membership than the total previous enrollment of members. Most of these are new members and therefore represent practically new work done. Thus far we have not attempted to form local organizations but have confined ourselves to building up the state membership. We expect, however, to begin organizing local societies before long. There are two or three local societies already formed, but they are not to my knowledge in active working condition. The society at Devils Lake is in the best condition, due to the interest and activity of Mrs. William Folger of that place.

Our plan of offering BIRD-LORE or Reed's 'Guide to Water-Birds' or Reed's 'Guide to the Land-Birds' as premiums given with each membership seems to be working nicely. It makes an attractive feature in securing memberships,

and I am sure will prove effective in keeping up the interest and stimulating the activity of our membership. I believe the plan is worth adopting by other societies that want live members. A considerable correspondence has been carried on since last spring in getting in touch with the people who are, or who should be, interested in the work.—W. B. BELL, *President*.

Ohio.—Without doubt the most important matter to report is the appointment in January, 1912, of Dr. Eugene Swope, as Field Agent for Ohio. The desirability of having such an agent in this section of the country had long been felt, and the ability of Doctor Swope, coupled with his willingness to act in that capacity, made his appointment a source of gratification to the Society. The work he has accomplished in his educational campaign in Ohio has far exceeded our expectations, and the Society sees the ideal almost realized: that is, the perpetuation, through a definite office, of the work which has been attempted so far, by volunteer workers. In Cincinnati, the work of the Society in connection with the schools and libraries has become a great factor in the educational work of the city. But until the appointment of Doctor Swope, no efforts to carry the work beyond, into the rural districts of Ohio where it was so badly needed, had been very successful.

To reduce it to figures, it can be estimated that in six months' time 3,500 children in Ohio have become members of the Society, who had never before been interested, and through these members several thousands of parents, relatives and friends will hear something of the value and the beauty of birds. The benefits should not be underestimated, since its effect is three-fold—first it protects the birds; second, it helps the farmer; and third, but by no means least, it creates a new standard of life and appreciation of the beautiful in nature to these same individuals.

The lectures in the libraries in the suburbs of Cincinnati are still as popular as ever, and very well attended; there have been some fifty or more talks and lectures to organizations, schools, churches, hospitals, etc., and the increase in enthusiasm and a growing respect for the work of the Society is due to the splendid type of men and women who have so valiantly and with so many sacrifices of time, gone forth as champions for their little feathered friends.

A very satisfactory agreement was reached between the milliners of Ohio and the game-wardens by which the former agreed to abandon the further sale of aigrettes until the law shall be tested in the higher courts. This was especially gratifying to the Society, as it believes in the most peaceful methods of enforcing the law that are, at the same time, practical.

There is a noticeable awakening to a proper appreciation of bird-life in Ohio, and the number is steadily increasing of those who preach the gospel of

"Hast thou learned to know the birds without a gun?

Hast thou loved the wild flower on the stem, and let it live?"

KATHERINE RATTERMANN, *Secretary*.

Oregon.—The Oregon Audubon Society has continued its educational work during the year by distribution of Audubon leaflets and talks on bird subjects.

Mr. L. R. Alderman, State Superintendent of Public Schools, has continued his interest in placing our literature in the hands of the teachers in the state; there were twelve Junior Audubon Societies formed during the year. These Societies have very intelligent teachers who are interested in this subject and are doing fine work with their pupils.

At the county fairs there were prizes given children for various exhibits furnished by themselves, which exhibits included prizes for bird nesting-boxes, the models and directions for making the boxes being furnished by this Society. These boxes always make a pleasing display and are the cause of much comment and educational explanation as to their uses, and the reasons for preserving song-birds, etc.

During the year, the Oregon Audubon Society gave three notable lectures. Mr. Dallas Lore Sharp, Professor of English in Boston University, gave a reading from his books. Mr. T. Gilbert Pearson, Secretary of the National Association of Audubon Societies, gave a stereopticon lecture, 'Preservation of Wild Birds and Animals' and Mr. W. L. Finley, President of this Society and the State Game-Warden, gave a stereopticon lecture on 'Bird Life in the Arizona Desert.' These lectures were exceptionally fine and called forth much favorable comment regarding the work this Society has in hand.

The Byron Z. Holmes bequest—\$1,200—came into our possession the first of the year. This has been invested in a mortgage, the interest of which is used for bird-protection.

The Audubon patrol-boat, the "Grebe," which has been used on the Lower Klamath Lake Reservation, was transferred to Upper Klamath Lake and used by the state in protecting birds in that part of the country during the summer. Since the Biological Survey recently placed a new boat at Klamath Lake for patrolling Klamath Lake Reservation, it was thought the "Grebe" could be used for other work, but the building of a dike across Klamath River, dividing the Klamath Reservation into two parts, makes it necessary to transfer the "Grebe" back to the Lower Klamath Lake where it will be used in conjunction with the new government patrol-boat.

This Society wishes to introduce the Cardinal Grosbeak into the state. We are convinced they will thrive well here, the climate being mild and conditions good. We have the necessary consent of the game-wardens, and trust by spring to have a number of pairs to liberate in the state, and we hope they will multiply and replenish themselves abundantly.

Oregon is not slow to recognize the value of non-game bird-protection from the viewpoint of economy as well as the claim of beauty and pleasure; our bird laws are good, and our lively game-warden sleeps with one ear open ready for the first case.—EMMA J. WELTY, *Corresponding Secretary*.

Pennsylvania.—For the past year the regular work of the State Society has been carried on much as usual. The traveling libraries have been sent to the various schools and organizations desiring them, and the leaflets, etc., have been distributed through various channels.

The Society at its annual meeting was fortunate enough to have Mr. Henry Oldys, of Washington, D. C., in his wonderful rendering of 'Bird-Notes.' This was given, not as a fancy sketch with 'piano accompaniment,' but as taken down, note by note, while listening to the birds, and whistled from these notes most accurately and pleasingly.

The work of the Society, however, has been principally in the new field of starting Junior Audubon Classes in the public schools of the state under the direction of the National Association of Audubon Societies. During the year, 113 classes were formed with a total paid membership of 2,349 pupils.

If the unknown donor of the fund which makes this work possible could know the delight with which this plan is received by teachers in small towns and outlying country districts, and receive some of the letters the children write about their enjoyment of the pictures and bird-study, he would certainly feel his gift was not only a help to the bird-protection cause, but a wonderful opening up of the delights of nature-study to the children.

The teachers, on whom so much of the awakening of a child's love of wild birds depends, can, with the help of BIRD-LORE, continue their nature-study work systematically through the different seasons of the year, and by writing to the State Secretary can receive literature and assistance on special points in bird-study they wish to take up with their classes, while the State Secretary, at practically small expense, can get in touch with work and persons interested all over the state.

The permanent success of the plan, however, must depend upon the manner in which the State Societies follow up the work so ably begun by the National Society, and having once sent literature to the teachers and shown interest in the work of the children, must keep in touch with the classes formed and in every way possible assist those teachers who are endeavoring to develop the child's love of nature.

The following extracts from two letters show the interested and intelligent work the teachers are doing in these classes:

"The extra leaflets and copies of Pennsylvania Bird Laws came and were very much appreciated. The latter were read and discussed in class, and the children distributed all the extra copies where they thought they would do good."

Another teacher writes:

"I have painted a Snowy Heron, life size, for my talks which are apparently popular, and I now want five more sets of leaflets for new members, making my club thirty-four in number."—E. W. FISHER, *Secretary*.

Rhode Island.—The Audubon Society of Rhode Island has been working the past year with one object in view, namely, larger membership. This is undoubtedly the problem of many State Societies. At present the membership is not large enough to materially influence legislation, hunting or the millinery trade. Neither is it sufficient to provide necessary funds for the educational work which needs to be done in the state.

In April the center of activity of the Society was transferred to the Park Museum in Providence, which is in close touch with the schools of the state and city. Through the aid and courtesy of the National Association, 1,004 Junior members have been secured since April 17, 1912, thereby taking the Audubon work into many homes where it was not before known. The Society's loan collection and library of over five hundred volumes was also placed at the museum where the system of loaning to schools and small libraries throughout the state has been continued. In addition a catalogue of the books has been issued, and any member of the Society, as well as any teacher, may borrow one or more books as in any public library. By the middle of May the library was in working order and now has 137 borrowers. Four hundred of the books have been used during this short period, and one boy read thirty-five different books during the summer. The majority of the users are Junior members, although a number of teachers now have books charged to their names.

With this limited introduction into the homes by way of the children, we are now sending a college student into the field to make a direct appeal for active members. A short experiment of this plan during the summer leads us to believe that it will be successful.

In general there is a great deal of interest in birds among teachers, children and parents, and just so far as funds will permit we are endeavoring to maintain this interest and to awaken others to the importance of bird-study and bird-protection.—HAROLD L. MADISON, *Secretary*.

Tennessee (East).—The members of this Society feel that they are to be congratulated on the work of their organization during the past year. Much has been accomplished in educating the people as to the value of birds. This was done largely through newspaper articles, as our daily papers have been quite generous in giving us space. Only a few days ago the afternoon paper offered us the woman's page for one issue. As a result of the publicity given our work by the press, the Audubon Society is one of the best-known organizations in Tennessee.

The Secretary has talked on birds before various schools and other gatherings, and, as she is no longer teaching, hopes to continue this work in the schools when permitted, and in other gatherings when invited. Mr. O. C. Woodward, under authorization of the Audubon Society, has printed and sent out over four hundred circulars to persons who showed an interest in

bird-protection by registering at our booth during the Appalachian Exposition. These circulars convey a hearty invitation to join us. We do not know what the harvest will be, but hope for great results. This feature of our work will be continued until the entire field is covered.

Several arrests have been made by the game-wardens of persons guilty of violation of the non-game law, and other persons who had ignorantly transgressed were warned.

Much interest was aroused among the school children, and it was found that they were always willing to aid in bringing to justice such persons as were guilty of killing birds.

The first year of the Society's activity was almost wholly given to the work of bird-protection, but the past year has been devoted to bird-study also, thus putting the organization on a foundation that will not easily crumble. The work of urging farmers and other land-owners to form game-preserves has been continued.

We enjoyed a lecture by Mr. James Henry Rice, Field Agent of the National Association of Audubon Societies, which aroused much interest. Those who attended the Summer School of the South were entertained and instructed by Mr. Henry Oldys, of Silver Spring, Maryland, who appeared before that body four times.

We suffered a serious loss when Mr. H. Tullsen, our President and organizer of our Society, moved to Taylor, Texas. He and his estimable wife continue their membership with us.—MISS MAGNOLIA WOODWARD, *Secretary*.

Tennessee (West).—On February 13, 1912, the West Tennessee Audubon Society held a meeting at Memphis and decided to disband and to reorganize under the name of the Tri-State Audubon Society of Eastern Arkansas, North Mississippi, and West Tennessee.

This action was taken in order to broaden its field of usefulness and by coöperation with a work conducted by the Agricultural Bureau at Washington, and known as the Boys' Corn Club movement, to carry instruction to the farmers throughout the section around Memphis, in regard to the great economic value of the birds.

The new organization was completed by the election of Dr. R. B. Maury as President, Messrs. Bolten Smith, Leon Banks and Dr. T. M. Lowry, Vice-Presidents, Mrs. Percy Finley, Corresponding Secretary, and Wm. John Luther, Treasurer. During the past year a growing interest in the birds, in their esthetic as well as economic value, has been manifested in the city of Memphis and the surrounding country, and bird-protection is now regarded as part of the course of instruction in the public schools. The membership of the Society has greatly increased, and several lectures with stereopticon illustrations have been provided by the liberality of the Goodwyn Institute for the coming year.—R. B. MAURY, *President*.

Texas.—It is with a sad heart and feelings of utter inability to do justice to the subject, that this report of the work in Texas is submitted for the annual publication of the history of bird-protection in our state.

Most of the readers of this bulletin have doubtless heard of the removal by death of the recognized genius of Audubon work in Texas, Capt. M. B. Davis, of Waco.

Captain Davis worked untiringly for years for the saving of our feathered friends generally, and whenever opportunity came or occasion required he trained his guns on the enemies of bird and wild life with such force and indisputable argument through lectures and the press that people sat up and took notice. He made war on the gunner and the gun manufacturers until some of his good friends thought he would defeat his own objects with his zeal for the preservation of useful birds. His lectures throughout the state were continued up to within a few weeks of his demise, and just ten days before he passed away, on June 18, he dictated a letter to the National Secretary calling attention to his work for Heron and Egret life in special localities in this state which he said would probably place our organization on a high plane as to that line of survey.

He continued, saying: "There have been many embarrassments, chief of which is health on my part, but I forced my way through them all, and unless I have a collapse I will turn over to you some very important matter on this subject in the near future.

"If I should merely submit a story of the region bounded by the Trinity and Sabine Rivers, I could give a locality which is so vastly wealthy in those forms of avian life that I do believe something wholly new should be entered upon from the lists of American Herons and Egrets and other birds of those tribes compassed within the area I have been searching, which is a broad strip of that class of forests in Texas which are vested in Spanish moss, and wherever trees stand close enough together the soil is protected for many miles around, producing in abundance the proper food for these birds. The group of Herons discovered by me and my surveyor in Jasper County have become absolutely safe, and will remain safe, we hope, until once more their strangely beautiful white plumage becomes indescribable upon the heavens to which they surely belong.

"Those people who appear to possess knowledge of heronries described the bird as ascending to infinite heights, then returning to us rebaptised in translucent sheen, which gave them a supernatural appearance."

In closing, Captain Davis said: "I submit all that I do as coming from my heart, which burns with eagerness to accomplish an end in Ornithology which shall go ringing down the ages and will eventually give me a place with you, Mr. Dutcher, Doctor Palmer and those other gentlemen with whom I have consorted all these years."

Within a few days after the dictation of the foregoing message, all that

was mortal of one of the most faithful friends the birds ever had was laid away in beautiful Oakwood Cemetery, followed by the deepest regrets of friends from far and near who had known him and his life work.

If the above letter had been intended for a part of his annual report, it could not have been more to the purpose.

The organization of Junior Audubon Clubs in the schools of the state was a part of a year's work. It will be taken up again together with talks and demonstration with charts for the education of the young, now that the schools are in session for the year.

Having studied different methods of bird-protection, laying due stress, always, upon wise legislation and favor with the law-makers, we have come to the conclusion that educating the children from the kindergarten age up through all the grades to graduation is the surest way of encouraging the preservation of birds and wild life; for, after all, the heart to love helpless creatures will prevail over the disposition to destroy, and when the boy becomes a man he will protect the birds through principle instead of through fear of the law. We believe that teaching mercy and kindness should be as much a part of the curriculum of our schools as a knowledge of spelling or arithmetic.

The campaign of bird-protection will be carried up to our next legislature, and strong hands will uphold what has already been done in our state, endeavoring to make better and stronger the laws now upon our statute books.

The State Federation of Women's Clubs, a section of which held a meeting in Waco last April, pledged their support of any legislation the Audubon Society might see fit to promote in the future; so, also, did the truck growers', orchardists' and the farmers' associations generally offer the bird-protectionists their cordial assistance and coöperation.

We have received hundreds of letters from school-teachers and others asking for information and leaflets on the work, and also from agriculturalists throughout the state. In every instance the leaflets and Audubon buttons have been forwarded with directions for the formation of Junior Audubon Classes. There seems to be a general awakening to the fact that a birdless world may be the legacy inherited by our children's children if the dreadful destruction of birds goes on many years longer unchecked.

One of the last pieces of work which the late Captain Davis did was to prepare manuscript for a work on 'Birds and Their Relation to Agriculture,' which will soon be issued by the State Commission of Agriculture, at Austin.

His plea for the Robin last winter was published in all the daily papers of the state, the circulation of which reaches up into the hundreds of thousands. It was read in many lands, and we have the satisfaction of receiving personal letters commending his efforts to remove that charming visitor from the frozen North, the Robin, from the game-bird list of Texas. His work for the shore-birds and the Doves has had wide publication, as well as his efforts to protect the horned toad and the Pelican.

His story of the Christmas toy gun last winter was a plea for the boy as well as the bird, and was widely read both in Texas and other states.

This report has necessarily taken a more personal form than is the custom in annual proceedings, but we hope under the circumstances to meet with the indulgence and pardon of all our readers.—MRS. M. B. DAVIS, *Assistant Secretary*.

Virginia.—The Audubon Society of Virginia found its first practical work of the winter in feeding the birds throughout the state.

We had an unprecedentedly long cold season with very deep snows, and as the birds in this climate are not accustomed to such conditions, they are unable to cope with them and perish by the thousands when such weather comes.

We had several hundred bushels of grain sent out from Richmond alone.

The active coöperation of the railroads in the quick distribution of this food was of inestimable value.

In addition to this, the appeal for help was made through all the principal newspapers of the state, and every section responded to it.

We opened and maintained Audubon rooms, where our Secretary spent three hours every afternoon to receive visitors, answer questions, lend books and distribute literature to those interested.

From there, also, we sent out the school leaflets to the many Junior Audubon Societies throughout the state.

It was our legislative year, and we succeeded in getting the law framed prohibiting the killing of Robins at all seasons. This bill met with serious opposition, as there are many counties where Robins have long been killed and sold by hundreds for food.

Our Audubon Legislative Game Department did splendid work before our legislature toward getting a state game law framed, providing for a State Game Commissioner, and paid game-wardens, with resident and non-resident hunters' license provided for.

We came within a few votes of passing this law, and the educational work done was of such a character that we feel reasonably certain of a victory next time.

This department of the Society is now raising a fund to be used at the opportune time for distributing educational matter throughout the state which will bring our legislature together already instructed for the support of such a bill.

We have answered many letters of inquiry about laws and how to proceed to have them enforced. We feel that the general interest is growing and hope for increasing good work.—MRS. W. E. HARRIS, *President*

West Virginia.—The West Virginia Audubon Society closes its first twelve months of existence with a membership of fifty-one, which is an increase of twenty-six since the date of organization, October, 1911. Of this number eleven are out-of-town members. Our growth has not been rapid, but the interest and enthusiastic coöperation of our membership, as evidenced during the year, presages a Society in West Virginia that means to "do things."

Our monthly meetings have been of interest and well attended. At these meetings we have studied and discussed the following birds: Cardinal, Quail, Chickadee, Tufted Titmouse, Blue-gray Gnatcatcher, Bluebird, Catbird and Wood Thrush. At different times our program has also included such topics as 'Life of Audubon,' 'How to Study Birds,' 'Economic Value of Birds,' etc. In July and August, outdoor meetings were held, the time being given almost entirely to field work.

In March the Society gave a lecture free to the public with the Rev. Earl A. Brooks as speaker, on the subject of 'Spring Migration.' In May we secured Mr. Henry Oldys to deliver his lecture on 'Bird-Notes.' On the day following the lecture, Mr. Oldys conducted three field-trips, one at four o'clock A.M., one at nine A.M., and the third at six P.M., all of which were well attended and of much profit. These lectures and outings gave quite an impetus to our work.

Through the efforts of our publicity committee and press agent, space has been secured in the Sunday edition of the morning city paper and in the Saturday issue of a local evening paper, which space is devoted to articles in interest of the birds under the head of 'Audubon Bird Notes.' Our press agent has also prepared several articles for the agricultural and school journals of the state and the Arbor and Bird Day Manual.

Three Junior Societies were formed last winter in the Parkersburg Public Schools by teachers who are members of this Society, and all are reported as gratifying successes. According to the last report these Junior Societies throughout the state number sixteen.

Through the generosity of a member, the Society was enabled to offer prizes for the first and second best and longest list of birds seen in this locality between April 1 and October 1, this year, to which contest any boy or girl of Parkersburg and vicinity, under the age of sixteen, was eligible. Several showed their interest by submitting the required monthly reports. The contest has just closed with the first prize, pocket edition of Reed's 'Land Birds' going to Carl Bibbee, who submitted a list of seventy birds, and the second prize, a year's subscription to BIRD-LORE, awarded to Herman Deem with a list of twenty-one birds.

Special attention and effort during the coming year will be given to the organization of Junior Audubon Societies and the upbuilding of membership in the State Society.

The newly elected officers are: Miss Ida M. Peters, President; Mrs. W. W.

George, Vice-President; Miss Hattie M. Alleman, Secretary; Mr. Geo. Tavenner, Treasurer.—HATTIE M. ALLEMAN, *Secretary*.

Wisconsin.—We are glad to report that the Wisconsin Audubon Society has had a successful year. We are just beginning our new fiscal year with strong hopes of continued good work. Our monthly publication has been issued regularly. This year we are going to make it better than last year, largely by planning more carefully in advance.

There are two undertakings which we attempted with some success last year which we wish to call to the attention of our sister societies. A year ago this fall, we endeavored to interest municipalities in the feeding of the birds that winter in our public parks. This met with some response; Milwaukee made a very active beginning and gave much needed help to hundreds of Gulls that stayed in the ice-bound harbor. Madison also responded. The other undertaking was worked out in Madison alone. Last spring we solicited from citizens not members of the Wisconsin Audubon Society one dollar each for a fund to erect in a public park a Martin house, and at the same time obtained the promise of the Park and Pleasure Drive Association to care for it if erected. With comparative ease we succeeded in erecting a colony house in time for the birds to occupy it. But what is most important to us is that we feel certain that in these ways we have made many people true friends of the birds and that we have inaugurated agencies which will continue to work of their own accord.—ROLAND E. KREMERS, *Secretary*.



LIST OF MEMBERS OF THE NATIONAL ASSOCIATION OF AUDUBON SOCIETIES

BENEFACTOR

*Albert Wilcox.....1906

FOUNDER

Mrs. Russell Sage.....1910

PATRONS

William P. Wharton.....1909

Miss Heloise Meyer.....1912

LIFE MEMBERS

Abbott, Clinton G.....	1910	Davis, William T.....	1910
Adams, Mrs. George E.....	1912	Earle, Carlos Y. Poitevent.....	1905
Babcock, Mrs. Perry.....	1912	Earle, Miss Eleanor P.....	1905
Bancroft, William P.....	1906	Eastman, George.....	1906
Barnes, Miss Cora F.....	1908	Edgar, Daniel.....	1908
Bates, Isaac C.....	1910	Elliot, Mrs. J. W.....	1912
Batten, George.....	1910	Emmons, Mrs. R. W.....	1908
Beebe, Mrs. J. Arthur.....	1907	Endicott, H. B.....	1908
Bigelow, William Sturgis.....	1912	Farwell, Mrs. John V., Jr.....	1909
Bingham, Miss Harriet.....	1907	Fay, Mrs. Flora Ward.....	1905
Bliss, Miss Catherine A.....	1911	Foote, James D.....	1907
Bliss, Mrs. W. H.....	1912	Forbush, Edward Howe.....	1910
Bolling, Mrs. Raynal C.....	1909	French, Miss Caroline L. W.....	1911
Bowdoin, Miss Edith.....	1911	*Frothingham, Howard P.....	1905
Bowdoin, Mrs. Temple.....	1911	Gallatin, F., Jr.....	1908
Bowman, Miss Sarah R.....	1905	Gazzam, Mrs. Antoinette E.....	1908
Brewster, William.....	1905	Gifford, Mrs. Robert L.....	1908
Bridge, Mrs. Lidian E.....	1907	Grant, W. W.....	1910
Brooks, A. L.....	1906	Greenway, Mrs. J. C.....	1912
Brooks, Mrs. Everett W.....	1907	Haehnle, Rheinhold.....	1912
Brooks, Gorham.....	1911	Havemeyer, Mrs. H. O., Jr.....	1907
Brooks, Peter C.....	1911	Hearst, Mrs. P. A.....	1909
Brooks, S.....	1907	Hemenway, Mrs. Augustus.....	1905
Brooks, Mrs. Shepard.....	1906	Hoffman, Samuel V.....	1907
Browning, J. Hull.....	1905	Hopewell, Frank.....	1911
Campbell, Helen Gordon.....	1909	Hostetter, D. Herbert.....	1909
Carr, Gen. Julian S.....	1907	Hunnewell, H. S.....	1905
Chapin, Chester W.....	1910	Huntington, Archer M.....	1905
Chapman, Clarence E.....	1908	Jackson, Mrs. James.....	1908
Childs, John Lewis.....	1905	Kidder, Nathaniel T.....	1905
Clarke, Mrs. W. N.....	1912	Kilmer, Willis S.....	1909
Clyde, W. P.....	1905	Kuser, John Dryden.....	1911
Coolidge, Oliver H.....	1912	Lane, Benj. C.....	1909
Coolidge, T. Jefferson.....	1907	Lawrence, Samuel C.....	1905
Crabtree, Miss L. M.....	1912	McConnell, Mrs. S. D.....	1908
Crocker, Mrs. Emmons.....	1912	McGraw, Mrs. Thos. S.....	1908
Crosby, Maunsell S.....	1905	Mackey, Clarence H.....	1908
Crozer, Mrs. J. Lewis.....	1908	Marshall, Louise.....	1906
Cudworth, Mrs. F. B.....	1911	Mason, Miss F. P.....	1912
Dane, Edward.....	1912	Meloy, Andrew D.....	1910
Dane, Ernest.....	1912	Meyer, Miss Heloise.....	1910
Davis, David D.....	1911	Moore, Clarence B.....	1909

*Deceased

Morton, Miss Mary.....	1906	Satterlee, Mrs. Herbert L.	1906
Murphy, Franklin.....	1909	Schroeder, Miss Lizzie H.	1911
North Carolina Audubon Society.....	1905	Seaman, L. W.	1912
Osborne, Mrs. Eliza W.	1906	Shattuck, Mrs. F. C.	1906
Palmer, Mrs. William H.	1912	Sherman, Miss Althea R.	1909
*Palmer, William J.	1906	*Smith, Miss Alice Weston.....	1911
Parker, A. H.	1908	Spalding, Mrs. A. M.	1912
Parker, Edward L.	1909	Stickney, Charles D.	1910
Pearson, T. Gilbert.....	1905	*Stokes, Miss Caroline P.	1908
Peck, Mrs. Walter L.	1909	Taft, Elihu B.	1911
Phillips, Eleanor H.	1908	Taylor, Chas. H., Jr.	1908
Phillips, Mrs. J. C.	1905	Thayer, Mrs. Ezra R.	1909
Phillips, John C.	1905	Thayer, John E.	1909
Pickman, Mrs. Dudley L.	1907	Thompson, Mrs. Frederick F.	1908
Pierrepont, Anna J.	1905	Tufts, Leonard.....	1907
Pierrepont, John J.	1905	Van Name, Willard G.	1905
Pinchot, Mrs. J. W.	1906	Vaux, George, Jr.	1905
Poland, James P.	1909	Wadsworth, C. S.	1911
Potts, Thomas.....	1905	Ward, Marcus L.	1908
Pratt, George D.	1911	Watson, Mrs. James S.	1911
Prime, Miss Cornelia.....	1909	Webster, F. G.	1905
Reed, Mrs. William Howell.....	1905	Weeks, Henry de Forest.....	1909
Reynolds, R. J.	1908	Wells, Mrs. Frederick L.	1911
Rockefeller, Wm. G.	1912	White, Mrs. Charles T.	1909
Rogers, Charles H.	1912	Williams, John D.	1909
Sage, Mrs. Russell.....	1905	Woodward, Mrs. George.....	1908
Saltonstall, John L.	1908		

*Deceased

ANNUAL MEMBERS AND CONTRIBUTORS TO THE GENERAL FUND FOR 1912

Abbe, Harriet C.	\$5 00	Brought forw'd.	\$338 00	Brought forw'd.	\$480 00
Abbott, Mrs. E. H.	5 00	Ames, Mrs. W. H.	5 00	Ayres, Harry M.	5 00
Abraham, Miss E. R.	5 00	Anderson, Mrs. J. C.	5 00	Ayres, Miss Mary A.	5 00
Achelis, Fritz.....	5 00	Anderson, J. C.	5 00	Bacon, Mrs. E. S.	5 00
Achilles, Mrs. G. S.	5 00	Andrews, Mrs. H. E.	5 00	Bacon, Mrs. F. E.	10 00
Ackerly, O. B.	5 00	Andrews, Miss Louie	5 00	Bacon, Miss M. P.	5 00
Acklen, Col. Jos. H.	5 00	Andrews, Roy C.	5 00	Badger, Arthur C.	5 00
Ackley, Miss A. E.	5 00	Andrews, Mrs. E. B.	5 00	Bailey, George, Jr.	5 00
Acton, Miss A. A.	5 00	Angier, Robert E.	5 00	Bailey, Henry T.	5 00
Adams, E. B.	5 00	Anonymous.....	2 00	Bailey, S. I.	1 00
Adams, Mrs. B.	5 00	Appleton, Miss M. E.	5 00	Baird, Miss Lucy H.	5 00
Adams, H. W.	5 00	Appleton, W. T.	5 00	Baird, Spencer (in memoriam).....	10 00
Adams, James S.	1 00	Appold, Bertha V.	5 00	Baker, Mrs. C. M.	5 00
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A Friend.....	2 00	Arnin, Albertina von	5 00	Baker, L. D., Jr.	5 00
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Renwick, Edw. S.	5 00	Rogers, Misses.	5 00	Seaver, Benj. F.	5 00
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Reynal, N. C.	10 00	Roosevelt School ...	5 00	Seelye, L. Clark.	5 00
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Reynolds, Dorrance.	5 00	Frank H.	5 00	Seligman, Mrs. G. W.	15 00
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Rhoads, Miss L. W.	5 00	Rothwell, J. E.	5 00	Seligman, Jefferson.	5 00
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Rice, Mrs. E. F.	5 00	H.	5 00	Sexton, Mrs. Ed. B.	5 00
Rice, J. H., Jr.	5 00	Rowley, John.	5 00	Sewall, Helen D.	5 00
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Ripley, E. L.	5 00	Sage, John H.	5 00	Shaw, Mrs. R. G.	5 00
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Carried forw'd, \$11,068 89

Carried forw'd, \$12,121 89

Total. \$12,365 89

The Report of the Treasurer of the National Association of
Audubon Societies, Ending October 19, 1912

INCOME AND EXPENSE ACCOUNT

Exhibit "B"

INCOME—

Members' Dues.....	\$8,041 00	
Contributions.....	4,324 89	
Interest from Investments.....	17,523 61	
Rent Willow Island.....	42 10	
Educational Leaflets Sales.....	1,175 25	
Von Berlepsch, Book Sales.....	132 79	
Sale of Slides.....	259 46	
Bird-Lore Sales.....	107 75	
Sundry Sales.....	90 78	
Commission.....	17 50	
Total.....		\$31,715 13

EXPENSES—

Warden Service and Reservations—

Salaries.....	\$1,091 00	
Expenses.....	276 48	
Reservation Expenses.....	40 00	
Launch Hire.....	124 00	
		\$1,531 48

Legislation—

Massachusetts Campaign.....	\$1,026 63	
Expenses.....	450 00	
		1,476 63

Educational Effort—

T. Gilbert Pearson, salary and expenses.....	\$5,920 67	
E. H. Forbush, salary and expenses.....	1,885 74	
M. B. Davis, salary and expenses.....	200 00	
W. L. Finley, salary and expenses.....	725 11	
Press Information.....	60 00	
Bird-Lore Extra Pages.....	945 58	
Printing.....	151 00	
Lecture.....	8 85	
Traveling.....	6 00	
Electros and Half-tones.....	387 89	
Drawings and Slides.....	922 65	
Library.....	148 41	
Educational Leaflets.....	2,782 94	
Bird-Lore to Members.....	1,952 10	
Grant's Book.....	102 70	
Von Berlepsch Books.....	143 26	
Prints, Charts, etc.....	68 82	
		16,411 72

Carried forward.....	\$19,419 83	\$31,715 13
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INCOME AND EXPENSE ACCOUNT, ENDING, OCTOBER 19, 1912, continued

INCOME, brought forward.....	\$31,715 13
EXPENSES, brought forward.....	\$19,419 83

General Expenses—

Salary Chief Clerk.....	\$1,300 00	
Salary Cashier and Bookkeeper.....	934 00	
Salary Stenographers.....	1,416 01	
Junior Clerks.....	558 35	
Postage.....	614 25	
Telegraph and Telephone.....	187 86	
Office and Store-room Rent.....	1,080 00	
Legal Services.....	280 00	
Envelopes and Supplies.....	390 39	
New Members' Expense.....	2,470 37	
Miscellaneous Expense.....	591 44	
Stenographic Work.....	22 10	
Cartage and Expressage.....	109 84	
Insurance.....	139 45	
Western Office.....	12 00	
Depreciation on Boats.....	219 66	
Depreciation on Office Furniture.....	92 71	
		10,418 43

Special Contributions—

North Dakota State Society.....	\$18 00	
Sage Fund.....	1,611 39	
		1,629 39

Total Expenses.....		31,467 65
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<i>Balance—</i> Surplus for the year.....	\$247 48
Refunded account expenses of preceding year.	30 00
	\$277 48

INCOME AND EXPENSE ACCOUNT, ENDING OCTOBER 19, 1912, continued

SAGE FUND—Income and Expense Account

Exhibit "C"

INCOME—

Balance unexpended October 20, 1911.....	\$1,362 67	
Mrs. Russell Sage.....	\$5,000 00	
National Association of Audubon Societies....	1,611 39	
Junior Secretaries.....	984 37	
		7,595 76
		\$8,958 43

EXPENSES—

Postage.....	\$775 83	
Salaries (Office).....	580 80	
Cartage.....	201 37	
Field Agents.....	1,562 39	
State Societies.....	280 30	
Traveling and Miscellaneous.....	69 14	
Wardens.....	124 15	
Educational Leaflets.....	654 66	
Stationery.....	122 36	
Rent of Office.....	150 00	
Buttons.....	233 68	
Bird-Lore.....	389 40	
Plates and Outlines.....	2,548 85	
Printing.....	88 50	
Legal Fees.....	100 00	
Sundries.....	34 14	
		7,915 57
Balance unexpended October 19, 1912.....		\$1,042 86

EGRET PROTECTION FUND—Income and Expense Account

Exhibit "D"

INCOME—

Contributions.....	\$6,610 54
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EXPENSES—

Cartage.....	\$19 83	
Wardens' Salaries and Expenses.....	1,597 90	
Postage.....	685 50	
Stenographic Work.....	452 95	
Envelopes.....	90 84	
Letter-heads.....	228 25	
Printing.....	16 50	
Educational Leaflets.....	1,247 30	
Bird-Lore.....	598 50	
Egret Legislation.....	75 00	
Miscellaneous Expense.....	2 71	
		5,015 28
Balance unexpended October 19, 1912.....		\$1,595 26

INCOME AND EXPENSE ACCOUNT, ENDING OCTOBER 19, 1912, continued

ALASKAN FUND—Income and Expense Account

Exhibit "E"

INCOME—

Contribution.....		\$1,000 00
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EXPENSE—

Traveling Expense.....	\$29 88	
Drawings.....	125 00	
Warden Service.....	250 00	
		404 88

Balance unexpended October 19, 1912.....		\$595 12
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CHILDREN'S EDUCATIONAL FUND—Income and Expense Account

Exhibit "F"

INCOME—

Contributions.....	\$10,000 00	
Junior Secretaries.....	528 17	
		\$10,528 17

EXPENSES—

Traveling Expenses.....	\$97 59	
Educational Leaflets.....	1,371 32	
Outlines.....	208 00	
Plates.....	3,380 60	
Clerical and Salaries.....	713 85	
Envelopes.....	196 20	
Postage.....	380 00	
Express and Cartage.....	168 75	
Contributions.....	300 00	
Telephone and Telegrams.....	8 96	
Circulars.....	170 00	
Bird-Lore.....	631 20	
Office Supplies.....	17 26	
Rent.....	150 00	
Buttons.....	160 83	
Printing.....	62 80	
Miscellaneous.....	28 65	
		8,046 01

Balance unexpended October 19, 1912.....		\$2,482 16
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| 3. Meadowlark | 9. Red-shouldered Hawk | 14. Barn Owl |
| 4. Robin | 10. American Sparrow Hawk | 15. Tree Sparrow |
| 5. Flicker | 11. Screech Owl | 16. Yellow-billed Cuckoo |
| 7. Snowy Heron | 12. Short-eared Owl | 29. Herring Gull |

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| 30. Snowflake | | |
| 31. Song Sparrow | | |
| 32. Barn Swallow | | |
| 33. Tree Swallow | | |

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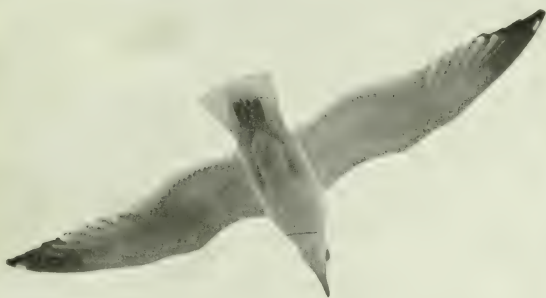
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